STATE OF MINNESOTA

**OFFICE OF ADMINISTRATIVE HEARINGS
FOR THE PUBLIC UTILITIES COMMISSION**

IN THE MATTER OF THE APPLICATION FOR A ROUTE PERMIT FOR THE FARGO TO ST. CLOUD 345 KV TRANSMISSION LINE PROJECT	PUC DOCKET NO. E002/TL-09-1056 OAH DOCKET NO. 15-2500-20995-2

SURREBUTTAL TESTIMONY OF

Daniel Kline

On Behalf of

APPLICANTS

NORTHERN STATES POWER COMPANY, A MINNESOTA CORPORATION
and GREAT RIVER ENERGY, A MINNESOTA COOPERATIVE CORPORATION

November 30, 2010

Exhibit _____

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND YOUR BUSINESS ADDRESS.

A. My name is Daniel Kline. My business address is 414 Nicollet Mall, Minneapolis, Minnesota 55401.

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

A. I am employed as a Senior Regional Transmission Planning Engineer at Xcel Energy Services Inc., the provider of certain business services for Northern States Power Company, a Minnesota corporation ("Xcel Energy"). I am the lead planning engineer for the Fargo–St. Cloud and Monticello–St. Cloud 345 kV projects. As the lead planning engineer, I have primary responsibility for the engineering analysis supporting the identified needs for the projects. I am also primarily responsible for the engineering analysis to support the facilities that will be constructed to meet those needs.

Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A. I earned a Bachelor of Science degree in Electrical Engineering (power systems and microelectronics emphasis) from Iowa State University in 2003 and a Master's of Engineering in Engineering Management from the University of Idaho in 2010. I am a registered Professional Engineer in the State of Minnesota, License Number 46235.

From 2006 to the present, I have been employed by Xcel Energy. From 2006 to 2009, I was a transmission planning engineer. As part of this position, I led the technical analysis and development of the Twin Cities–Fargo 345 kV Project. From 2009 to present, I have been employed in the Regional Transmission Planning department. In this capacity, I have been responsible for overseeing

Xcel Energy's participation in and analysis of regional transmission studies, representing Xcel Energy in dealings with the Midwest Independent Transmission System Operator, Inc. ("MISO"), and negotiating issues related to regional transmission development with other utilities. Also, as a planning engineer, I have assisted in preparing electric and magnetic field information for regulatory filings in Minnesota and Wisconsin.

Prior to joining Xcel Energy, I was employed with Open Systems International Inc. where I was responsible for, among other duties, analyzing customer requirements, creating a product implementation plan for Power Systems applications on customer projects and taking overall responsibility for implementing that plan. Some of the applications I dealt most extensively with were AGC, economic dispatch, power flow and state estimator (security analysis). I began my career as a transmission planning engineer at Pacific Gas and Electric Company ("PG&E") where I was responsible for planning activities in the southern half of PG&E's service territory with customer load totaling approximately 5,500 MW. My resume is attached as **Schedule 1**.

Q. FOR WHOM ARE YOU TESTIFYING?

A. I am testifying on behalf of Xcel Energy and Great River Energy ("Applicants").

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. I am providing testimony to address concerns raised by NoCapX2020 relating to magnetic field calculations based on anticipated and hypothetical loading scenarios. These calculations are shown on attached **Schedule 2**. I note that this schedule is updated from Schedule 7 of Darrin Lahr's Direct Testimony, which has been withdrawn. **Schedule 2** corrects a title error – the levels assumed are 600 and 1,500 MVA loading – and provides some contextual information

regarding the loading levels. I developed the anticipated and hypothetical scenarios shown on that schedule in support of a compliance filing submitted in the Certificate of Need docket, Docket No. E002/CN-06-1115, on August 20, 2010. A copy of that compliance filing ("Compliance Filing") is attached as **Schedule 3**. I also directed the preparation of the magnetic field calculations shown on **Schedule 2**.

Q. WHAT SCHEDULES ARE ATTACHED TO YOUR TESTIMONY?

A. Schedule 1: Kline Resume.

Schedule 2: Magnetic field calculations assuming 600 and 1,500 MVA loading.

Schedule 3: Compliance Filing: In the Matter of the Application of Northern States Power Company (D/B/A/ Xcel Energy), Great River Energy, and Others for Certificates of Need for the three CapX2020 345-kV Transmission Lines, Docket No. E002/CN-06-1115, Compliance Filing for CapX Fargo Phase 1 Pursuant to Order Point 4 of May 22, 2009 Certificate of Need (August 20, 2010).

II. MAGNETIC FIELD CALCULATIONS, 2015

Q. DID YOU ASSIST IN THE PREPARATION OF MAGNETIC FIELD CALCULATIONS PROVIDED IN SCHEDULE 6 TO THE DIRECT TESTIMONY OF DARRIN LAHR?

A. Yes. I provided the anticipated loading levels that were used to calculate the magnetic field levels as shown in Schedule 6 to the Direct Testimony of Darrin Lahr.

Q. WHAT LOADING ASSUMPTIONS DID YOU PROVIDE?

A. My assumed loading values were based on anticipated flows on the Fargo-St. Cloud transmission line segments in 2015 under system intact conditions, i.e. all

major bulk transmission facilities in service, including all the CapX202 Group 1 transmission lines.[1] In other words, my assumptions reflected a typical operating scenario. I note also that this evaluation did not assume major generation additions in North Dakota, South Dakota and western Minnesota beside those that are already planned for construction. Based on my analysis for 2015, I estimated that peak flows would be approximately 158 MVA, resulting in a peak amperage levels of 264 amps. I also estimated that off-peak amperage would be approximately 158 amps.

III. COMPLIANCE FILING

Q. WHAT INFORMATION WERE APPLICANTS REQUIRED TO PROVIDE AS PART OF THE COMPLIANCE FILING?

A. Order Point 4 of the Certificate of Need order dated May 22, 2009 required Applicants to "make a compliance filing disclosing each project's transmission capacity, owners, and ownership structure." Applicants provided this information in the Compliance Filing.

Q. HOW DO YOU DEFINE CAPACITY?

A. The electric industry generally defines capacity of a line in two ways. One type of capacity is the thermal or design limit of the conductors. In other words, capacity is the maximum loading level. When loading levels reach the thermal capacity, the conductors begin to experience physical damage and ultimately fail with continued operation at that level. The other type of capacity is system capacity which is the capacity of or expected flow on a facility based on system

[1] The CapX Group 1 transmission lines are: the Brookings County–Hampton 345 kV line, the Hampton–Rochester–La Crosse 345 kV line, the Fargo–St. Cloud 345 kV line, the Monticello–St. Cloud 345 kV line, and the Bemidji–Grand Rapids 230 kV line.

operations. As current on a transmission line increases, its impedance or resistance to the flow of energy increases. At very high levels of current, the impedance of the line increases to such a level that energy will take other high voltage paths with lower impedance. This fact creates a functional limit to a facility's ability to carry power. In some facilities, particularly high voltage facilities, this system capacity limit will be somewhat beneath a facility's thermal or design limit.

Q. WHAT IS THE THERMAL/DESIGN LIMIT OF THE FARGO-ST. CLOUD 345 KV PROJECT CONDUCTORS?

A. The thermal/design limit of the Fargo-St. Cloud 345 kV conductors is 2,050 MVA.

Q. WILL THE FARGO–ST. CLOUD 345 KV LINE EVER OPERATE AT ITS THERMAL LIMITS?

A. No. The system limit would be somewhat below the thermal capacity.

Q. WHAT ASSESSMENT DID YOU MAKE FOR THE COMPLIANCE FILING REGARDING FUTURE LOADING ON THE FARGO-ST. CLOUD 345 KV AND ST. CLOUD–MONTICELLO 345 KV LINES?

A. For the Compliance Filing, I was asked to consider the loading and performance of the Fargo-St. Cloud and Monticello-St. Cloud 345 kV lines. In doing so, I did not differentiate between segments because I believed it was most important to provide a value that reflected the potential maximum operation of the full length of the line.

Q. WHAT INFORMATION DID THE COMPLIANCE FILING PROVIDE REGARDING FUTURE LOADING LEVELS?

A. The Compliance Filing notes that after connections between Fargo, Alexandria, St. Cloud and Monticello are completed, flows could potentially reach 600 MVA under certain conditions. Further in the future, with thousands of megawatts of additional generation in North Dakota, South Dakota and Manitoba, there are times when loading levels could potentially reach 1200 to 1500 MVA for short periods of time.

Q. WHAT WERE THE ASSUMPTIONS YOU MADE REGARDING EXISTING TRANSMISSION AND GENERATION THAT LED YOU TO CONCLUDE LOADING LEVELS MAY REACH 600 MVA?

A. I started with a case that reflected a future with high wind development in North Dakota and South Dakota. This case assumed all of the CapX2020 Group 1 transmission lines were in service. Together these lines provide capacity for the integration of considerable additional generation. With precise new generation interconnection levels, particularly those required for RES compliance, largely unknown, I assumed sufficient generation was in existence to fully subscribe the capacity provided by the Brookings County–Hampton 345 kV transmission line and another several hundred megawatts of new generation sourced from North Dakota. Using modeling software, I was able to create approximately 600 MVA of flow on the facilities during the off-peak loading condition when other major transmission facilities were out of service. Off-peak loading conditions would generally occur for about six hours per day. Flows nearing 600 MVA could occur during this limited time period and only during the rare times when wind generation is high and another transmission facility is out of service. I note that any facility outage that would occur during off-peak, high loading conditions on

the Fargo–St. Cloud and Monticello–St Cloud 345 kV facilities, would be an unplanned outage. Planned outages of other major facilities for maintenance or upgrades would be expected to be planned during lower loading conditions.

Q. WHAT IS THE EXPECTED DURATION OF AN UNPLANNED OUTAGE OF A MAJOR TRANSMISSION FACILITY?

A. Transmission facilities are over 99.9 percent reliable. Unplanned outages of any line can be as short as a few seconds but more typically last several hours to a couple of days. Therefore, in any year, the high loading values of 600 and 1,500 would only potentially occur for up to six hours per day, for up to several days in a row.

Q. WHAT WERE THE ASSUMPTIONS YOU MADE REGARDING EXISTING TRANSMISSION AND GENERATION THAT LED YOU TO CONCLUDE LOADING LEVELS COULD REACH AS HIGH AS 1200 TO 1500 MVA?

A. To estimate what might be the highest loading levels that might occur on the line at some point in the future, I considered a hypothetical high generation scenario where several thousands of megawatts (> 4,000 MW) of new generation is developed in North Dakota, South Dakota and Manitoba. I also assumed that there was an unplanned outage of a major facility in the area, such as the Brookings County–Hampton 345 kV line. Additionally, I assumed only limited major transmission system improvements were added to the system. I was not able to create these flows using power system modeling software. However, based on my knowledge of the transmission system, I concluded that under these specific conditions, loading levels might theoretically reach 1200 to 1500 MVA during the duration of the outage if it were to occur at off-peak times.

Q. IF ADDITIONAL GENERATION WERE CONSTRUCTED, WOULD ADDITIONAL TRANSMISSION FACILITIES NEED TO BE CONSTRUCTED AS WELL?

A. Yes. For my hypothetical scenario, to identify the highest potential loading levels, I assumed only limited new major transmission facilities other than the CapX2020 Group 1 facilities. In actuality, the generation assumed under my scenarios would require significant associated transmission. If several thousand megawatts of generation were placed in the Dakotas and Manitoba, major high voltage transmission facilities (345 kV and higher) would need to be added. If new transmission facilities were built, then contingent loadings on the Fargo-St. Cloud and Monticello–St. Cloud 345 kV lines likely would be reduced.

Q. DO YOU KNOW HOW LIKELY IT IS THAT SEVERAL THOUSAND MEGAWATTS OF GENERATION WILL DEVELOP TO THE WEST?

A. Predicting future generation patterns with any certainty is difficult. As demonstrated by the MISO generation interconnection queue, there is great interest in adding generation to the west. However, it is unknown how many of these proposed projects will obtain the financing and contractual agreements necessary to become operational. The uncertainty in the ability to construct sufficient transmission to allow those facilities to reach market adds an additional unknown aspect to such a hypothetical exercise.

IV. MAGNETIC FIELD CALCULATIONS, SCHEDULE 2

Q. DID YOU OVERSEE PREPARATION OF YOUR SCHEDULE 2?

A. Yes. As I stated, I identified the loading levels. I then oversaw the preparation of the magnetic field calculations.

Q. WHY WERE THESE CALCULATIONS PREPARED?

A. These calculations were prepared because NoCapX, U-CAN and NoRCA (collectively, "NoCapX") had raised concerns during Draft Environmental Impact Statement meetings regarding the magnetic field levels that would be associated with the hypothetical loading levels provided in the Compliance Filing. Since that time, NoCapX has raised additional questions regarding magnetic field calculations in hearings and served discovery requests regarding magnetic fields.

Q. ARE YOU AVAILABLE TO ANSWER QUESTIONS REGARDING SCHEDULE 2?

A. Yes. I am available to answer questions regarding the assumptions and calculations shown in Schedule 2. I defer to Dr. Peter Valberg regarding issues relating to magnetic fields and health effects.

Q. DOES SCHEDULE 2 SHOW MAGNETIC FIELD CALCULATIONS FOR A VARIETY OF STRUCTURE TYPES?

A. Yes.

Q. WHICH STRUCTURE TYPES ARE MOST RELEVANT HERE?

A. The Fargo–St. Cloud 345 kV Project is currently proposed as single pole, double circuit 345 kV capable with one circuit strung (vertical configuration) and in service. The second row shows this configuration. In addition, because it is anticipated that a second circuit may be strung in the future when conditions warrant, there may be interest in reviewing the fourth row with calculations for the same structure type with two 345 kV circuits in service.

Q. GENERALLY, WHAT EFFECT DOES DOUBLE CIRCUITING HAVE ON MAGNETIC FIELD LEVELS?

A. There is a cancellation effect and the overall magnetic field level for two lines co-located on common structures is lower than for just one. This is shown in **Schedule 2** where the values in the 4th row (two circuits operating) are lower than the 3rd row (one circuit operating).

V. CONCLUSION

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

A. Yes.

3049908v2

414 Nicollet Mall
MP Suite 800
Minneapolis, MN 55401

Work Phone: 612-330-7547
Fax: 612-330-6590
E-mail: daniel.p.kline@xcelenergy.com

DANIEL KLINE, P.E.

STATEMENT Licensed professional engineer with electrical engineering, transmission planning, and project leadership experience ranging from single cities to large multi-state regions with utilities across the country and around the world

EDUCATION

08/07 to 05/10 *University of Idaho* *Moscow, ID*
Master of Engineering in Engineering Management

08/99 to 05/03 *Iowa State University* *Ames, IA*
Bachelor of Science in Electrical Engineering
Emphasis in Power Systems and Microelectronics

WORK EXPERIENCE

04/09 to Present *Xcel Energy Services Company* *Minneapolis, MN*
Senior Engineer, Regional Transmission Planning

- Coordinate involvement of Xcel Energy planning department in regional cost allocation discussions; develop guiding principles, determine how those principles apply in the framework of regional discussions, and negotiate with other stakeholders to find common ground
- Manage participation of all Midwest ISO transmission owners in Planning Advisory Committee
- Represent Xcel Energy in discussions for Upper Midwest Transmission Development Initiative (UMTDI)
- Oversee Xcel Energy participation in Strategic Midwest Area Renewable Transmission (SMART) Study; review study models, shape study assumptions, develop study alternatives
- Manage Xcel Energy participation in regional transmission "seams" issues, including interface with utilities in Canada, North Dakota, South Dakota, and Wisconsin
- Assess FERC rulings and provide input from planning into Company and transmission owner interventions

02/06 to 04/09 *Northern States Power - Minnesota* *Minneapolis, MN*
Transmission Planning Engineer

- Oversee completion of 10-year plan for Xcel Energy's entire Wisconsin service territory. Coordinate and focus efforts of other engineers to complete this work
- Manage study of upper Midwest region focused on identifying necessary electric transmission infrastructure to meet 2016 renewable energy standard milestone. Assist in developing necessary regulatory filings
- Lead the technical analysis and development of a 250-mile, 345 kV transmission line from Fargo, North Dakota to Monticello Generating Plant with capital expenditures of approximately $500 million dollars and assist with necessary regulatory fillings
- Guide projects to inclusion in Midwest ISO Transmission Expansion Plan (MTEP)
- Complete focused study to develop long-term planning solutions for two areas in Wisconsin; resulting projects represent approximately ten years and $35 million worth of capital improvements
- Develop technical regulatory requirements for permit applications in Wisconsin
- Represent Xcel Energy at public meetings to increase awareness of and public involvement in the transmission planning process
- Review and respond to MRO Standards changes with respect to their effect on Xcel Energy

414 Nicollet Mall
MP Suite 800
Minneapolis, MN 55401

Work Phone: 612-330-7547
Fax: 612-330-6590
E-mail: daniel.p.kline@xcelenergy.com

- Represent Xcel Energy to third-parties and the Midwest ISO during generation interconnection proceedings
- Analyze transmission projects being completed by outside utilities and their effect on Xcel Energy's transmission grid
- Perform analysis of requested transmission interconnections and report on their effect on the transmission network
- Coordinate implementation of projects with internal and external customers, including consultants, project managers, community members, and contractors

07/04 to 02/06 *Open Systems International, Inc.* *Plymouth, MN*
Power Systems Engineer

- Analyze customer requirements, created a product implementation plan for Power Systems applications on customer projects, took responsibility for implementing that plan
- Ensure the customer was thoroughly trained in the effective use of the applications they purchased
- Perform Factory Acceptance Testing with the customer
- Plan and implemented the proper commissioning strategy for the applications at a customer site after system installation, ensuring the complete implementation of the application products
- Act as a customer advocate by proposing software enhancements, monitoring software development, and advising OSI management of customer-desired features
- Managed development of Java-based power system applications by tracking and scheduling necessary software upgrades
- Create and verified power flow model for large, interconnected electrical utility
- Configure and tested a variety of applications, ranging from AGC to power flow (transmission and distribution) to geographical information systems
- Present training sessions and workshops to users both familiar with and new to OSI products

07/03 to 07/04 *Pacific Gas & Electric Company* *San Francisco, CA*
Transmission Planning Engineer

- Assess transmission grid weaknesses on ten-year horizon for four PG&E territories and more than 5500 MW of customer load
- Assist with development of regulatory filings for 20-mile, $200 million 230 kV line
- Review Nuclear Regulatory Commission voltage stability requirements and studied long-term voltage stability in area around Diablo Canyon Nuclear Power Plant
- Correspond with California Independent System Operator (ISO) as point of contact for issues related to reliable system operation
- Propose and obtained funding for $12 million 230/115 kV, 420 MVA transformer installation
- Present Transmission Grid Expansion Plan Proposal to a group consisting of ISO members, independent power producers, municipal utility representatives, engineering consultants, environmental groups, and consumer watch groups
- Conduct long-term voltage reliability study of Bay Area for various critical contingencies. Results of study were used to determine Bay Area transmission projects over ten year horizon.

03/01 to 07/03 *P & E Engineering Co.* *Carlisle, IA*
Electrical Engineer/Electrical Engineering Technician

- Perform voltage and power flow analysis on 34.5kV and 24.9kV collector

414 Nicollet Mall
MP Suite 800
Minneapolis, MN 55401

Work Phone: 612-330-7547
Fax: 612-330-6590
E-mail: daniel.p.kline@xcelenergy.com

systems for wind farms in Iowa, North Dakota, Oklahoma, and New Mexico
- Model Council Bluffs Energy Center from 345kV level to 480V motor control centers to initiate coordination study for entire substation
- Conduct transmission planning study for municipal electrical utility resulting in suggested system enhancements and presentation to board of directors

05/00 to 01/03 *MidAmerican Energy Company* *Urbandale, IA*
Energy Management System Intern
- Update and improve system displays
- Program, update, and maintain dynamic system mapboard
- Manage and maintain Energy Management System

HONORS AND ASSOCIATIONS

Eagle Scout Award Recipient
American Legion Boy's State Attendee
Representative to Mayor's Housing Occupancy Committee, Ames, IA, 2003
Vice-Chairman, Government of the Student Body Finance Committee, 2002-03
Senator, Government of the Student Body, 2002-03
President, Acacia Fraternity, 2001
Member, National Society of Collegiate Scholars
Member, Iowa State University Jazz Ensemble One, 2001-2003
Member, Institute of Electrical and Electronics Engineers, 2003 to Present

PROFESSIONAL SKILLS

Registered Professional Engineer in the State of Minnesota
Skilled public speaker comfortable in technical, political, and social settings in front of large and small groups
Work well in group settings
Strong computer skills in IBM AIX, TRU64 Unix, SuSe and RedHat Linux, DOS, Windows (95, 98, 2000, 2000 Server, 2003 Server, XP) and Macintosh formats.
Programming knowledge in C, C++, and EPCL
Experienced with Power Tools for Windows (PTW), GE Positive Sequence Load Flow (PSLF), and Power System Simulator for Engineering (PSS/E)
Knowledge of Oracle, MySQL, SQL Server, and Sybase relational database platforms
Experienced in design and implementation of Automatic Generation Control, Power Flow, State Estimator, and Contingency Analysis software packages

OTHER INTERESTS

History, Supreme Court decisions and Law, Hockey, Backpacking

3054782

CALCULATED MAGNETIC FLUX DENSITY (MILLIGAUSS) FOR PROPOSED 345 KV TRANSMISSION LINE DESIGNS (3.28 FEET ABOVE GROUND) (600 AND 1500 MVA LOADINGS)*

Structure Type	System Loading	Current (Amps)	Distance to Proposed Centerline												
			-300'	-200'	-100'	-75'	-50'	-25'	0'	25'	50'	75'	100'	200'	300'
Single Pole Davit Arm 345kV Single Circuit Delta Config	600 MVA	1000	2.98	6.33	21.28	32.97	54.40	88.83	120.79	112.71	67.90	38.59	23.71	6.27	2.73
	1500 MVA	2500	7.44	15.84	53.20	82.42	136.01	222.07	301.96	281.77	169.74	96.49	59.28	15.67	6.83
Single Pole Davit Arm 345kV Single Circuit Vertical Config	600 MVA	1000	3.26	7.46	26.96	42.06	68.82	103.97	96.76	60.77	37.34	24.29	16.73	5.60	2.67
	1500 MVA	2500	8.15	18.65	67.39	105.14	172.05	259.93	241.91	151.92	93.34	60.72	41.82	13.99	6.68
Single Pole Davit Arm 345kV/345kV Double Circuit with One Circuit In Service	600 MVA	1000	2.70	5.62	16.79	24.37	37.45	60.95	97.03	104.17	68.86	42.03	26.92	7.45	3.26
	1500 MVA	2500	6.74	14.06	41.96	60.92	93.64	152.38	242.57	260.42	172.14	105.07	67.29	18.62	8.15
Single Pole Davit Arm 345kV/345kV Double Circuit with Both Circuits In Service	600 MVA	1000	.73	2.19	12.58	23.01	45.30	86.76	113.75	87.37	45.85	23.39	12.8	2.25	.74
	1500 MVA	2500	1.81	5.47	31.44	57.53	113.26	216.89	284.37	218.42	114.62	58.47	32.08	5.61	1.84

*The values depicted in this chart are hypothetical line load conditions based on two generation development scenarios in South Dakota, North Dakota and Manitoba. The 600 MVA case assumes approximately 2,000 MW of additional generation. The 1,500 MVA case assumes more than 4,000 MW of new generation. Both the 600 MVA and 1,500 MVA cases estimate potential high line loading conditions during off-peak times (approximately six hours per day) with major bulk transmission facilities out of service. Actual future line loadings are unknown and will be affected by a myriad of factors in addition to generation development including transmission system topology, weather and time of day.

BRIGGS
BRIGGS AND MORGAN

2200 IDS Center
80 South 8th Street
Minneapolis MN 55402-2157
tel 612.977.8400
fax 612.977.8650

August 20, 2010

Michael C. Krikava
612.977.8566
mkrikava@briggs.com

VIA ELECTRONIC FILING

Burl W. Haar
Minnesota Public Utilities Commission
Suite 350
121 East Seventh Place
St. Paul, MN 55101-2147

Re: In the Matter of the Application of Great River Energy, Northern States Power Company (d/b/a Xcel Energy) and Others for Certificates of Need for Three 345 kV Transmission Lines with Associated System Connections
MPUC Docket No.: ET-2, E-002, et al./CN-06-1115
OAH Docket No.: 15-2500-19350-2

Dear Dr. Haar:

Enclosed for electronic filing please find Applicants' Compliance Filing for CapX Fargo Phase 1 Pursuant to Order Point 4 of May 22, 2009 Certificate of Need Order in the above-captioned matter. By copy of this letter, all parties of record are being served with same.

Very truly yours,

BRIGGS AND MORGAN, P.A.

/s/ Michael C. Krikava
Michael C. Krikava

MCK/rlh
Enclosure
cc: Service List

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

David Boyd	Chair
J. Dennis O'Brien	Commissioner
Thomas Pugh	Commissioner
Phyllis Reha	Commissioner
Betsy Wergin	Commissioner

IN THE MATTER OF THE APPLICATION OF NORTHERN STATES POWER COMPANY (D/B/A XCEL ENERGY), GREAT RIVER ENERGY, AND OTHERS FOR CERTIFICATES OF NEED FOR THE THREE CAPX2020 345-KV TRANSMISSION LINES	Docket No. E002/CN-06-1115 **Compliance Filing for CapX Fargo Phase 1 Pursuant to Order Point 4 Of May 22, 2009 Certificate of Need Order**

INTRODUCTION

Applicants Northern States Power Company, a Minnesota Corporation ("Xcel Energy" or "NSPM") and Great River Energy ("GRE") submit this compliance filing pursuant to Order Point 4 of the Minnesota Public Utilities Commission's ("Commission") May 22, 2009 Certificate of Need Order in the above-captioned Docket. Order Point Four requires Applicants to provide a compliance filing disclosing each project's transmission capacity, owners, and ownership structure. In response to this requirement, Applicants submit this compliance filing to provide the desired information for the Monticello to St. Cloud portion of the Fargo Project, which we refer to as CapX Fargo Phase 1.

Ownership Structure

On August 18, 2010, Xcel Energy, Great River Energy, Western Minnesota Municipal Power Agency ("WMMPA"), ALLETE, Inc., d/b/a Minnesota Power, Otter Tail Corporation, d/b/a Otter Tail Power Company ("Project Owners"), executed agreements memorializing ownership, construction, operations and maintenance arrangements for CapX Fargo Phase 1. The following Project Agreements were executed: the Project Participation Agreement ("PPA"), the Construction Management Agreement, the Transmission Capacity Exchange Agreement, and the Operations and Maintenance Agreement.

The PPA governs most of the rights and obligations of the Project Owners, as funders of the construction of the project facilities and as owners of the completed and energized facilities. Except for the Monticello Substation and Quarry Substation assets, the Project Owners of CapX Fargo Phase 1 will own all property interests in the Facilities (defined as the transmission lines and associated real property) as tenants-in-common in undivided ownership interests. The assets of Quarry Substation and Monticello Substation will be owned individually by NSPM.

Project Owners

The Project Owners have elected the following ownership percentages in CapX Fargo Phase 1:

Great River Energy	25.0%
Minnesota Power	14.7%
WMMPA[1]	11.0%
Otter Tail Power	13.2%
Xcel Energy	36.1%

These are the same ownership percentages represented by the Applicants in their Certificate of Need application to the Commission, dated August 16, 2007, for the CapX Fargo Project.

In addition, the Project Owners have established a Transmission Capacity Exchange Agreement ("TCEA") to align their rights to the capacity of the line in the event there is no longer a Regional Transmission Operating authority like the Midwest Independent System Operator. In that circumstance this Agreement would grant each Project Owner the right to use the capacity and associated transfer capability of CapX Fargo Phase 1 for all purposes associated with the transmission of electric energy and data for electric utility communications, in proportion to that Owner's percentage interest.

The Project Owners completed their commercial arrangements and agreed to commence construction of the project in order to meet the in-service date of the project by 4th Quarter 2011.

[1] Applicants note that Missouri River Energy Services ("MRES") has been a participating CapX2020 utility from the commencement of these proceedings. Under the Project Development Agreement, MRES held rights to as much as 11% of the Fargo Project. MRES chose to assign its rights to WMMPA. While WMMPA will be the owner of the 11% share of CapX Fargo Phase 1, it will continue to be associated with MRES and the overall utility operations are unchanged.

Transmission Capacity

Thermal or design capacity. The CapX utilities have worked collaboratively to develop construction standards that will ensure uniformity in the design and capability of the all CapX projects. In line with these standards, the CapX Fargo Phase 1 345 kV transmission line will have a design capacity of 2,050 MVA. This indicates the maximum level of power associated with the current flow that the facility is designed to handle without damaging conductors. To save cost and avoid installing expensive new equipment, certain pieces of substation equipment will be limited to 1,800 MVA during substation maintenance or contingency conditions when a substation circuit breaker is out of service. While the equipment is physically capable of supporting these power levels there are other system conditions that will limit power levels as described below.

System Capacity. As current on a transmission line increases, its impedance or resistance to the flow of energy increases. At very high levels of current, the impedance of the line increases to such a level that energy will take other high voltage paths with lower impedance. For this reason, the entire Fargo – Monticello 345 kV line will not see flow as high as its design or thermal capacity.

It is expected that in the interim operating scenario, with only the Monticello - Quarry line added to the network, it will see flows as high as 200 MVA when all transmission facilities are in service. Should the limiting contingency of the existing St. Cloud-area transmission system occur (loss of the Benton County – Granite City double-circuit 115 kV line), flow on the Monticello - Quarry line could be as high as 240 MVA. This is more than enough power to supply the 180 MW of need forecasted for the area by the Applicants in the Certificate of Need proceeding.

Transmission studies indicate that once the entire length of the Fargo – Monticello line is in service, flow on the line could be as high as 600 MVA. As additional generation is integrated into the electric system, particularly in North Dakota, South Dakota, and Manitoba, the Fargo – Monticello line could experience current flow with associated power levels as high as 1200 to 1500 MVA. It is expected that these conditions would occur during periods when other transmission lines are out of service.

CONCLUSION

This compliance filing provides the information required by Order Point 4 pertaining to CapX Fargo Phase 1. Copies of this filing have been served on the service list for this matter.

Dated: August 20, 2010

Respectfully submitted:

BRIGGS AND MORGAN

By: /s/ Michael C. Krikava
Michael Krikava (#182679)
Zeviel T. Simpser (#0387974)
2200 IDS Center
80 South Eighth Street
Minneapolis, MN 55402
(612) 977-8400

Attorneys for Northern States Power Company, a Minnesota corporation

Jennifer Thulien Smith
Assistant General Counsel
Xcel Energy Services Inc.
414 Nicollet Mall
Minneapolis, MN 55401

Eric Olson
Vice President and General Counsel
Great River Energy
12300 Elm Creek Boulevard
Maple Grove, MN 55369

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In the Matter of the Application of Great River Energy, Northern States Power Company (d/b/a Xcel Energy) and Others for Certificates of Need for Three 345 kV Transmission Lines with Associated System Connections

CERTIFICATE OF SERVICE
MPUC Docket No. CN-06-1115
OAH Docket No. 15-2500-19350-2

Roshelle Herstein certifies that on the 20th day of August, 2010, she filed a true and correct copy of Applicants' Compliance Filing for CapX Fargo Phase 1 Pursuant to Point 4 of May 22, 2010 Certificate of Need Order by posting it on www.edockets.state.mn.us. Said document(s) were also served via U.S. Mail and e-mail as designated on the Official Service List on file with the Minnesota Public Utilities Commission.

/s/ Roshelle L. Herstein
Roshelle L. Herstein