BEFORE THE OFFICE OF ADMINISTRATIVE HEARINGS

FOR THE MINNESOTA PUBLIC UTILITIES COMMISSION

STATE OF MINNESOTA

In the Matter of the Request by Minnesota Power

For a Certificate of Need for the

Great Northern Transmission Line

OAH Docket No. 65-2500-31196

MPUC Docket No. E-015/CN-12-1163

Exhibit _____

OVERVIEW OF CERTIFICATE OF NEED FILING AND PROJECT OVERVIEW

Direct Testimony and Exhibits of

MICHAEL H. DONAHUE

August 8, 2014

MR. MICHAEL H. DONAHUE

OAH Docket No. 65-2500-31196

MPUC Docket No. E-015/CN-12-1163

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I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Michael H. Donahue and my business address at Minnesota Power is 30 West Superior Street, Duluth, Minnesota 55802.

Q. What is your current position with Minnesota Power?

A. I am Transmission Project Development Manager, Minnesota Power and I am the Project Manager for the Great Northern Transmission Line (also "Project").

Q. As Project Manager, what are your responsibilities?

A. I have the overall responsibility for the development of the Great Northern Transmission Line. This includes business case development, regulatory, permitting and MISO relations.

Q. Prior to your current position, please describe your previous positions with the Company.

A. I have been with the Company since 1978 in a variety of positions, including Supervisor, Transmission Services, Transmission Service Specialist, Supervisor, Property Accounting and various positions within Minnesota Power's Project Administration Department.

Q. On whose behalf are you testifying?

A. I will be testifying on behalf of Minnesota Power.

Q. What is the purpose of your testimony?

A. The primary purpose of my testimony is to discuss the estimated costs of the Project and the estimated impact on Federal Energy Regulatory Commission ("FERC") jurisdictional rates. I also provide information on the overall Project construction, operation and maintenance.

Q. Do you also sponsor certain sections of Minnesota Power's Certificate of Need Application ("Application")?

A. Yes, I sponsor:

- Section 4.3.1 (Total Cost);
- Sections 4.3.2 (Service Life);
- Section 4.3.3 (Average Annual Availability);
- Section 4.3.4 (Estimated Annual Operations and Maintenance Costs);
- Section 4.3.5.2 (FERC Jurisdictional Rates);
- Sections 5.2.3 and 5.3 (Project construction, Maintenance and Operation); and
- Appendix L (Minnesota Power/Manitoba Hydro Great Northern Transmission Line, Economic Impact on Northern Minnesota, University of Minnesota Duluth, Labovitz School of Business and Economics (Bureau of Business and Economic Research), July 2013).

Q. Do you also sponsor Exhibits to your testimony?

A. Yes. I sponsor a number of responses to other parties' Information Requests, as follows:

- Ex. ___ (MD), Schedule 1, Minnesota Power's Supplemental Response to Department of Commerce ("DOC") Information Requests ("IR") 9 and 10, regarding Minnesota Power's calculations of MISO Revenue Requirements;
- Ex. ___ (MD), Schedule 2, Minnesota Power's Response to DOC IR 16, regarding the "participant pays" model;
- Ex. ___ (MD), Schedule 3, Minnesota Power's Response to DOC IRs 17, 18 and 19, regarding MISO Pricing Zones;
- Ex. ___ (MD), Schedule 4, Minnesota Power's Response to Large Power Interveners ("LPI") IR 2, regarding Minnesota Power's cost estimates for the Project. Please note that this Exhibit contains TRADE SECRET information. Therefore, both a NON-PUBLIC and a PUBLIC version of this Exhibit will be filed; and
- Ex. ___ (MD), Schedule 5, supplementing Minnesota Power's Responses to LPI IRs 3 and 4.

II. PROJECT COST ESTIMATES

Q. Did Minnesota Power provide an estimated total Project cost in its Certificate of Need Application ("CON Application")?

A. Yes. In Section 4.3.1 of the Application, the Company provided a range of estimated cost of between $406 million and $609 million. At the time of the Application (October of 2013), Minnesota Power had a number of potential routes still under consideration, so we based this estimate on a proxy route and based on the information available to us at that time.

Q. Did the Company re-examine its estimated total Project cost when it filed its Route Permit Application?

A. Yes. When the Company filed its Route Permit Application on April 15, 2014, Route Alternatives and Segment Options were identified. Therefore, the Company re-examined and refined its prior cost range estimate to reflect the route data then available. In addition, Minnesota Power refined its estimate related to expected construction costs, including the use of matting in wetlands to mitigate potential wetland impacts. Based on preliminary engineering considerations of the Route Alternatives and Segment Options, as of April 15, 2014 Minnesota Power estimated the construction of the Project on the Route Alternatives (including any combination of proposed Segment Options), including substation facilities, to cost between $495.5 million and $647.7 million in 2013 dollars. Ex. __ (MD),

Schedule 4 provides more detailed information on Minnesota Power's cost estimate regarding one of the two alternate routes proposed in that proceeding. Of course, if other routes are ultimately selected by the Commission, these cost estimates may change.

Q. Have there been any revisions in the cost estimates for the Project since the filing of the Route Permit Application?

A. Yes. Power Engineers completed a MISO sponsored facility study report in early July 2014. This report concluded that the 500 kV Series Compensation Station originally budgeted at the expanded Blackberry Substation should now be a separate facility located at the midpoint of the 500 kV transmission line. In addition, Minnesota Power then increased the Project estimate to account for property taxes that will assessed against Project assets before the in service date of June 1, 2020. These two items will increase the Project cost to between $557.9 million and $710.1 million. However, Minnesota Power ratepayers will be responsible for only 28.3 percent of the Project cost, equating to $158 million to $201 million.

Q. Do you anticipate that the Company will continue to refine its cost estimates for the Project?

A. Yes. The Company will continue to refine its cost estimates as appropriate and will provide updated cost information as necessary.

Q. Have you also estimated the annual operations and maintenance costs anticipated for the Project?

A. Yes. The primary annual maintenance expense for transmission line is aerial inspection. These inspections look for broken insulators or structural defects which could compromise the line. If issues are identified, ground crews will be dispatched to correct the defect. In addition to structural maintenance, the right-of-way also must be kept clear of vegetation. Vegetation control is performed on a scheduled and routine basis. Additional vegetation management will also be performed if the aerial inspection discovers issues. The cost for routine maintenance will depend on the topology of the terrain and the type of maintenance required, but typically will run from $1,100 to $1,600 per mile.

III. PROJECT CONSTRUCTION, OPERATIONS AND MAINTENANCE, FUNDING OBLIGATIONS AND COST RECOVERY

Q. Please discuss the Project construction, its in-service date and the overall schedule Minnesota Power has developed to meet that date.

A. Project construction, particularly construction practices, will be covered in detail in the Route Permit proceeding. Relevant to this Certificate of Need proceeding, the in-service date for the proposed Project is June 1, 2020. To meet this schedule, Minnesota Power began stakeholder meetings and agency outreach in 2012. We filed the Certificate of Need Application ("Application") in October of 2013 and have since filed our Route Permit Application and Presidential Permit Application.

Mr. Atkinson further discusses these meetings, outreach efforts and regulatory approvals necessary for the Project, including the environmental review. As explained in the Application, the Company's overall schedule allows for two years for the environmental review, one year for final design, easement negotiation/acquisition and permitting, and three years for construction and restoration.

Q. What size work force will be required for this effort?

A. Minnesota Power estimates the work force required for construction of the Project's facilities to be over 200 people per year. This includes tree trimming crews, transmission line construction workers, substation upgrade construction workers, safety supervisors, environmental support, and other on- and off-site support staff. Minnesota Power will work with local governments in the Project area to meet any specific local employment obligations. There will also be a need for additional contracted professional services related to line and substation design. The Company does not expect that additional permanent jobs will be directly created by construction of the Project. However, the construction activities will provide a seasonal influx of additional dollars into the communities during the three-year construction phase, with construction materials purchased from local vendors where feasible.

Q. Can you also discuss the Business Structure agreed to between Minnesota Power and Manitoba Hydro to facilitate the construction of the Project?

A. As discussed by Mr. McMillan, Minnesota Power will own 51 percent of the Project, while Manitoba Hydro will own the 49 percent balance with the ownership as tenants in common[1]. However, Manitoba Hydro does not intend to be an owner of the Project past mid-year 2016 and it is reviewing ownership options with another Minnesota MISO Transmission Owner. If Manitoba Hydro does not identify another MISO Transmission Owner to assume its share of the Project, Minnesota Power will assume 100 percent ownership of the Project as of mid-year 2016. If Minnesota Power assumes 100 percent ownership in the Project, Manitoba Hydro will continue to be obligated to fund their 49 percent share of the Projects cost. All funds received by Minnesota Power from Manitoba Hydro after that date will be considered a Contribution in Aid of Construction by Minnesota Power and will be booked as an offset to Project cost. Thus keeping the Minnesota Power funding obligation constant.

[1] For ease of review, references to Manitoba Hydro in this testimony also encompass its subsidiary, 6690271 Manitoba Ltd.

Q. Please describe the construction funding obligations as it relates to the above referenced business structure?

A. While Minnesota Power is a 51 percent owner of the Project, Minnesota Power has only a 46 percent initial funding obligation for construction cost.[2] Manitoba Hydro will provide a 5 percent Contribution in Aid of Construction in recognition of the potential increase in the Project's capacity over the originally estimate capacity of 750 MW.[3]

Therefore, Manitoba Hydro will provide 54 percent of construction funds either through Contribution in Aid of Construction ("CIAC") payments (if Minnesota Power becomes the 100 percent owner), or a 5 percent CIAC payment and the assignment of 49 percent to another Minnesota MISO Transmission Owner. These funding ratios and are included in the MISO Facilities Construction Agreement ("FCA"). The FCA has been submitted to MISO for their review. Once MISO has completed their review, the FCA will be executed and submitted to FERC for approval. FERC approval is expected within 60 days of submittal. Once the FCA is executed it will be forwarded to the Commission.

[2] As discussed below, Minnesota Power and its customers will not bear the ultimate responsibility for this 46 percent share of the Project costs, as 17.7 percent of the Project costs will be covered by Manitoba Hydro under the Must Take Fee included in the 133 MW Renewable Optimization Agreements.
[3] MISO has determined through its System Impact Study that the southbound capacity for the Project could approach 883 MW.

Q. Can you please quantify those values based on your description above?

A. Yes. Please refer to the table below which has been prepared using the estimates included in Appendix A of the MISO Facilities Construction Agreement as submitted to MISO for their review.

Funding Option	Total Project Cost	MP Responsibility	MH-CIAC	MH-Assignment
100% MP Ownership	$676,242,900	$311,071,700	$365,171,200	
Assignment	$676,242,900	$311,071,700	$ 33,812,100	$331,359,100

Q. Please describe how Minnesota Power plans to recover its funding obligation?

A. As discussed by Mr. McMillan, Minnesota Power's ultimate funding obligation will correlate to 250 MW of transfer capability.

The Minnesota Power requested capacity consists of two capacity requests to MISO. Minnesota Power requested 250 MW of capacity to provide a transmission path for the 250 MW Agreements between Minnesota Power and Manitoba Hydro previously approved by the Commission. The Company also requested 133 MW of capacity to provide a transmission path for the 133 MW Renewable Optimization Agreements that have now been executed.

Minnesota Power plans to include all costs associated with our funding obligation in a future Transmission Cost Recovery Rider for retail rates and through our MISO Attachment O process for wholesale customers. However, under the terms

of the 133 MW Renewable Optimization Agreements, Manitoba Hydro will provide a "Must Take Fee" which will be in excess of the pro rata revenue requirements associated with the 133 MW capacity request. This "Must Take Fee" credit will be included as an offset to revenue requirements in both the Transmission Cost Recovery Rider and the MISO Attachment O. Additional details on this "Must Take Fee" have been included in Mr. Rudeck's testimony and exhibits.

Q. Can you also describe the operations and maintenance practices that Minnesota Power will follow regarding the Project facilities?

A. Again, this topic will be addressed in detail in the Route Permit proceeding. The Company will require periodic access to the right-of-way of the transmission line to perform inspections, conduct maintenance, and repair damage. Regular maintenance and inspections will be performed during the life of the facility to ensure its continued integrity. Generally, 500 kV lines are inspected annually for problems by foot, ATV, truck, snowmobile, or by air. Inspections are limited to the right-of-way and to those areas where obstruction or terrain may require off-right-of-way access. If problems are found during inspection, repairs are performed and the landowners compensated for any losses incurred.

Similarly, at the Blackberry Substation, inspections will be performed regularly to maintain equipment and make necessary repairs. Routine maintenance will be

conducted as required to remove undesired vegetation that may interfere with the safe and reliable operation of the substation.

IV. ESTIMATED IMPACT OF PROJECT ON SYSTEM-WIDE RATES

Q. Will the Project impact the rates that Minnesota Power charges its customers?

A. Yes. The Project will impact the rates of both retail and wholesale customers. I address the wholesale rate impacts and Mr. McMillan addresses the retail rate impacts. Before discussing the wholesale rate impacts, it is important to recognize that while the Project will impact the rates that Minnesota Power charges both its retail and wholesale customers, Minnesota Power has taken steps to minimize that impact.

First, regarding the upfront total Project costs, it is important to note that, as an alternative to the Project, Minnesota Power estimated in the Application that a 230 kV transmission option for the delivery of power under the 250 MW Agreements with Manitoba Hydro discussed by Mr. McMillan and Mr. Rudeck would cost Minnesota Power (and by extension, its customers) from $200 to $240 million (2020 dollars). Minnesota Power through Power Engineers has reviewed and revised those estimates by applying similar environmental considerations as now included in the 500 kV estimates. These revisions now indicate that the cost of a 230 kV line will range from $277 million to $355 million (2013 dollars). In

addition, Minnesota Power and its customers would bear the full maintenance costs associated with such a line.

In contrast, Minnesota Power will be asking its customers to be responsible for only 28.3 percent of the Project cost, corresponding to the pro-rata share of the line needed for the delivery of the 250 MW Agreements. Minnesota Power will also initially fund another 17.7 percent of the Project cost, bringing Minnesota Power's initial responsibility to 46 percent. However, Minnesota Power ratepayers will not be responsible for the costs associated with this 17.7 percent portion of the Project costs, as these costs will be offset by the "Must Take Fee" as discussed in Mr. Rudeck's testimony. Going forward, Minnesota Power will also be responsible for only its pro rata share of maintenance cost based on its ownership percentage.[4] Manitoba Hydro will be financially responsible for the balance of Project cost as well as their share of ongoing maintenance.

When compared to the 230 kV alternative, the Project not only provides substantial cost savings for Minnesota power customers, it also provides a superior long-term solution to Company, customer, State and regional transmission needs as discussed by other company witnesses.

[4] Based on 51 percent ownership, but again a significant portion of these costs will be offset by the Must Take Fee included in the 133 MW Renewable Optimization Agreements, meaning the Company's ratepayers will not bear 51 percent responsibility for these costs.

Q. By "long-term solution," what do you mean?

A. In the Company's Transmission Plant Depreciation Study (Docket No. E-015/D-13-252), Minnesota Power has requested a 55 year life be established for certain transmission line assets and a 44 year service life for substation equipment. If approved, those service lives would apply to the Project's 500 kV line and the substation assets. As a practical matter, a 500 kV line and substation equipment is rarely completely retired, but is repaired, replaced or upgraded to meet future needs. In addition, transmission assets such as the Project have very few mechanical elements and will be built to withstand severe weather extremes. These assets are controlled by computer based protection so outages should be momentary and scheduled maintenance outages are very infrequent. As a result, the average annual availability of transmission assets such as the Project is very high, near or above 99 percent.

Q. Can you describe how Minnesota Power calculated the Project's likely impact on wholesale rates?

A. Minnesota Power, as a Transmission Owner in MISO, develops transmission rates annually through the completion of the MISO Attachment O. Attachment O is a FERC-approved formula rate template used by all MISO Transmission Owners to develop transmission rates. MISO uses these rates to establish a price that MISO

Market Participants could expect to pay when they utilize transmission service provided by MISO.

The Project is one of the largest transmission projects ever undertaken in Minnesota and will have an impact on MISO rates. Based on Minnesota Power's revised cost estimate as updated in this testimony, the Project will add $30.1 million in MISO revenue requirements in the first year of operation to the Minnesota Power load zone. In contrast, if Minnesota Power would construct a stand-alone 230 kV project, that stand-alone project would add $52.2 million in additional revenue requirements to Minnesota Power's MISO rates. Thus, the Project has the potential of reducing Minnesota Power's MISO rates by 21.9 percent when compared to a stand-alone 230 kV build. Ex. __ (MD), Schedule 1 provides further detail regarding these comparative cost impacts.

Q. But wouldn't the Project mean that costs would be allocated to other entities, similar to other recent large transmission projects?

A. No. The Project is not currently eligible for MISO cost allocation and instead will be fully funded under a "participant pays" model. Ex. __ (MD), Schedule 2 provides further discussion of the participant pays model and Ex. __ (MD), Schedule 3 provides information on MISO Pricing Zones.

Q. Does Minnesota Power pay MISO for Network Service under the MISO Tariff and does Minnesota Power receive revenues from MISO for Network Service?

A. Minnesota Power qualifies for the "Bundled Load Exemption" under the MISO Tariff (Section 37.3), Minnesota Power does not pay MISO for Network Service (MISO Schedule 9 rates) under the Tariff and therefore no MISO Schedule 9 revenues are distributed to Minnesota Power by MISO for Minnesota Power Network Service. Beginning in January of 2014, MISO began distributing some MISO Schedule 9 Network Service revenues to the MP Pricing Zone as a result of Xcel Energy becoming the energy supplier to Dahlberg Light and Power. The Dahlberg load is not considered part of the Minnesota Power bundled load and therefore the "Bundled Load Exemption" does not apply.

Q. Would the Project also impact Minnesota Power's municipal customers?

A. Yes. Minnesota Power supplies power to full requirement municipal customers based on a standardized power supply formula rate under FERC's market based rate authority. The revised MISO rates will have an impact on our municipal customers. Municipal customers also pay the FERC approved transmission rate under the annually filed MISO Attachment O plus unbundled ancillary services. Minnesota Power's municipal customers 2014 total estimated increase is 4.96

percent based on a 2014 in-service (recognizing the Project is scheduled to be in-service by 2020).

V. OVERALL ECONOMIC IMPACT OF PROJECT

Q. Has Minnesota Power attempted to quantify the overall economic impact of the Project on northern Minnesota?

A. Yes. The Company engaged the Labovitz School of Business and Economic Research at the University of Minnesota Duluth to evaluate the direct, indirect and induced economic effects of the Project on the economy of northern Minnesota.

Q. What were the key findings of this study?

A. The Report developed by the Labovitz School, "Minnesota Power/Manitoba Hydro Great Northern Transmission Line Economic Impact on Northern Minnesota," is attached to the Application as Appendix L. Based on the information available as of July, 2013, the key findings of the Report included:

- The development-certification stage of the Great Northern Transmission Line will have an average total employment impact of almost 22.7 workers per year. In the peak year of construction employment, the Great Northern Transmission Line will directly employ approximately 213.0 workers during the year with a total impact of almost 286.2 full- and part-time employees throughout the region;

- Construction will generate a total output effect of almost $839.0 million between 2016 and 2020 in the northern Minnesota economy; and
- In addition, of course, once in service the transmission assets of the Project will generate tax revenues for the local communities for many years to come.

Q. Does this conclude your testimony?

A. Yes, it does.

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State of Minnesota
DEPARTMENT OF COMMERCE
DIVISION OF ENERGY RESOURCES

Utility Information Request

Docket Number: E015/CN-12-1163 Date of Request:July 7, 2014

Requested From: David R. Moeller, Senior Attorney Response Due:July 17, 2014

Analyst Requesting Information: Stephen Rakow

Type of Inquiry:

[ ] Financial	[ ] Rate of Return	[ ] Rate Design
[ ] Engineering	[ ] Forecasting	[ ] Conservation
[ ] Cost of Service	[ ] CIP	[ ] Other:

If you feel your responses are trade secret or privileged, please indicate this on your response.

Request No.	
9	Please explain how the $26.4 million in MISO revenue requirements for the Project for the MP load zone, mentioned on page 31 of the Petition, and was calculated.

Response:

The attached spreadsheet labeled "MISO Rate Impacts.xls" was used to develop the $26.4 million in MISO Revenue Requirements. The spread sheets starts with summary version the MISO Attachment O rate template, to which GNTL specific data is added. The result of the embedded calculations is the projected MISO revenue requirements of $26.4 million.

Response by: Michael H. Donahue List Sources of Information:

Title: Trans. Project Development Mgr. _____

Department: Trans. Regulatory Compliance and Business Support

Telephone: 218-355-2617 _____

Minnesota Power
SUMMARY PROJECTED ATTACHMENT O
Impacts of the Great Northern Transmission Line
500 kV Option

	AC System 2014	GNTL Impacts 2014	Revised AC Rates 2014	
RATE BASE				
Gross Plant in Service				
Transmission	349,706,896	213,765,067	563,471,963	
General & Intangible	22,068,727	-	22,068,727	
Total Gross Plant	371,775,623	213,765,067	585,540,690	
Accumulated Depreciation				
Transmission	115,545,244	5,344,127	120,889,371	
General & Intangible	12,896,430	-	12,896,430	
Total Accumulated Depreciatin	128,441,674	5,344,127	133,785,801	
Net Plant in Service				
Transmission	234,161,652	208,420,940	442,582,592	
General & Intangible	9,172,297	-	9,172,297	
Total Net Plant	243,333,949	208,420,940	451,754,889	
CWIP Recovery for Incentive Rate Transmission Projects	51,506,190	-	51,506,190	
Adjustments to Rate Base	(59,850,759)	(2,210,865)	(62,061,624)	
Land Held for Future Use	17,072	-	17,072	
Working Capital	5,280,816	-	5,280,816	
Rate Base	240,287,268	206,210,075	446,497,343	
REVENUE REQUIREMENT				
O&M				
Transmission	34,317,631	997,089	35,314,720	
Less: LSE included in O&M Accounts	2,581,965	-	2,581,965	
Less: Account 565	16,985,358	-	16,985,358	
A&G	7,163,118	475,211	7,638,329	
Less: EPRI & Reg. Comm. Exp. & Non-safety Ad	120,241	-	120,241	
Plus: Transmission Related Reg. Comm. Exp	127,332	-	127,332	
Transmission Lease Payments	962,768	-	962,768	
Total O&M	22,628,621	1,472,300	24,100,921	
Depreciation Expense				
Transmission	8,825,013	5,344,127	14,169,140	
Prefunded AFUDC Amortization	(121,712)	-	(121,712)	
General	854,516	-	854,516	
Total Depreciation Expense	9,557,817	5,344,127	14,901,944	
Taxes Other Than Income				
Labor Related - Payroll	664,821	-	664,821	
Plant Related - Property	3,830,945	5,310,405	9,141,350	
Plant Related - Other	132,788	-	132,788	
Total Taxes Other Than Income	4,628,554	5,310,405	9,938,959	
Income Taxes	11,148,366	9,779,485	20,927,851	
Return (inlcudes ROE plus Interest)	20,920,899	18,449,984	39,370,883	
Revenue Requirement	68,884,257	40,356,301	109,240,558	
Less: Attachment GG Adjustment	(17,678,954)	-	(17,678,954)	
Less: Attachment ZZ Adjustment	(4,687,077)	-	(4,687,077)	
MP Revenue Requirement to be Collected under Attachment O	46,518,226	40,356,301	86,874,527	
Revenue Credits				
Account No. 454	609,661		609,661	
Account No. 456	3,538,415	14,015,743	17,554,158	
Total Revenue Credits	4,148,076	14,015,743	18,163,819	
True Up	(1,258,522)	-	(1,258,522)	
Minnesota Power Adjusted Revenue Requirement	**41,111,628**	**26,340,558**	**67,452,186**	
GRE Revenue Requirement to be Collected under Attachment O				
Assigned to the MP Pricing Zone	12,100,304	-	12,100,304	
Joint Revenue Requirement to be Collected under Attachment O	**53,211,932**	**26,340,558**	**79,552,490**	
MP MISO Load (MW's)	1,716	1,716	1,716	
GRE MISO Load assigned to the MP Pricing Zone (mW's)	193	193	193	
Total MISO Load in the MP Pricing Zone	**1,909**	**1,909**	**1,909**	
Annual 2014 MISO Joint Pricing Zone Network Rate (Schedule 9)	**27,871**	**13,798**	**41,672**	
Monthly 2014 MISO Joint Pricing Zone Network Rate (Schedule 9)	**2,323**	**1,150**	**3,473**	49.52%

DOC IR 009.1 Attachment

State of Minnesota
DEPARTMENT OF COMMERCE
DIVISION OF ENERGY RESOURCES

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[ ] Engineering	[ ] Forecasting	[ ] Conservation
[ ] Cost of Service	[ ] CIP	[ ] Other:

If you feel your responses are trade secret or privileged, please indicate this on your response.

Request No.	
10	Please explain how the $34.5 million in revenue requirements for the 230 kV alternative, mentioned on page 31 of the Petition, was calculated.

Response:

The attached spreadsheet labeled "MISO Rate Impacts 230 kV Option.xls" was used to develop the $35.4 million in MISO Revenue Requirements. The spreadsheet starts with summary version the MISO Attachment O rate template, to which GNTL specific data is added. The result of the embedded calculations is the projected MISO revenue requirements of $35.4 million.

Response by: Michael H. Donahue List Sources of Information:

Title: Trans. Project Development Mgr. _____

Department: Trans. Regulatory Compliance and Business Support

Telephone: 218-355-2617 _____

Exhibit _____ (MD), Schedule 1, Page 4 of 4

Minnesota Power
SUMMARY PROJECTED ATTACHMENT O
Impacts of the Great Northern Transmission Line
230 Kv Option

	AC System 2014	GNTL Impacts 2014	Revised AC Rates 2014	
RATE BASE				
Gross Plant in Service				
Transmission	349,706,896	181,700,000	531,406,896	
General & Intangible	22,068,727	-	22,068,727	
Total Gross Plant	371,775,623	181,700,000	553,475,623	
Accumulated Depreciation				
Transmission	115,545,244	4,542,500	120,087,744	
General & Intangible	12,896,430	-	12,896,430	
Total Accumulated Depreciatin	128,441,674	4,542,500	132,984,174	
Net Plant in Service				
Transmission	234,161,652	177,157,500	411,319,152	
General & Intangible	9,172,297	-	9,172,297	
Total Net Plant	243,333,949	177,157,500	420,491,449	
CWIP Recovery for Incentive Rate Transmission Projects	51,506,190	-	51,506,190	
Adjustments to Rate Base	(59,850,759)	(1,879,232)	(61,729,991)	
Land Held for Future Use	17,072	-	17,072	
Working Capital	5,280,816	-	5,280,816	
Rate Base	240,287,268	175,278,268	415,565,536	
REVENUE REQUIREMENT				
O&M				
Transmission	34,317,631	997,089	35,314,720	
Less: LSE included in O&M Accounts	2,581,965	-	2,581,965	
Less: Account 565	16,985,358	-	16,985,358	
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Plus: Transmission Related Reg. Comm. Exp	127,332	-	127,332	
Transmission Lease Payments	962,768	-	962,768	
Total O&M	22,628,621	1,472,300	24,100,921	
Depreciation Expense				
Transmission	8,825,013	4,542,500	13,367,513	
Prefunded AFUDC Amortization	(121,712)	-	(121,712)	
General	854,516	-	854,516	
Total Depreciation Expense	9,557,817	4,542,500	14,100,317	
Taxes Other Than Income				
Labor Related - Payroll	664,821	-	664,821	
Plant Related - Property	3,830,945	4,513,837	8,344,782	
Plant Related - Other	132,788	-	132,788	
Total Taxes Other Than Income	4,628,554	4,513,837	9,142,391	
Income Taxes	11,148,366	8,312,548	19,460,914	
Return (inlcudes ROE plus Interest)	20,920,899	15,682,460	36,603,359	
Revenue Requirement	68,884,257	34,523,645	103,407,902	
Less: Attachment GG Adjustment	(17,678,954)	-	(17,678,954)	
Less: Attachment ZZ Adjustment	(4,687,077)	-	(4,687,077)	
MP Revenue Requirement to be Collected under Attachment O	46,518,226	34,523,645	81,041,871	
Revenue Credits				
Account No. 454	609,661		609,661	
Account No. 456	3,538,415	-	3,538,415	
Total Revenue Credits	4,148,076	-	4,148,076	
True Up	(1,258,522)	-	(1,258,522)	
Minnesota Power Adjusted Revenue Requirement	**41,111,628**	**34,523,645**	**75,635,273**	
GRE Revenue Requirement to be Collected under Attachment O				
Assigned to the MP Pricing Zone	12,100,304	-	12,100,304	
Joint Revenue Requirement to be Collected under Attachment O	**53,211,932**	**34,523,645**	**87,735,577**	
MP MISO Load (MW's)	1,716	1,716	1,716	
GRE MISO Load assigned to the MP Pricing Zone (mW's)	193	193	193	
Total MISO Load in the MP Pricing Zone	**1,909**	**1,909**	**1,909**	
Annual 2014 MISO Joint Pricing Zone Network Rate (Schedule 9)	**27,871**	**18,085**	**45,959**	
Monthly 2014 MISO Joint Pricing Zone Network Rate (Schedule 9)	**2,323**	**1,507**	**3,830**	64.90%

DOC IR 010.1 Attachment

State of Minnesota

DEPARTMENT OF COMMERCE
DIVISION OF ENERGY RESOURCES

Utility Information Request

Docket Number: E015/CN-12-1163 Date of Request:July 7, 2014

Requested From: David R. Moeller, Senior Attorney Response Due:July 17, 2014

Analyst Requesting Information: Stephen Rakow

Type of Inquiry:

[ ] Financial	[ ] Rate of Return	[ ] Rate Design
[ ] Engineering	[ ] Forecasting	[ ] Conservation
[ ] Cost of Service	[ ] CIP	[ ] Other:

If you feel your responses are trade secret or privileged, please indicate this on your response.

Request No.	
16	Please explain what a "participant pays model" means as discussed on page 31 of the petition.

Response:

The GNTL Project is being brought forward to satisfy a series of Transmission Service Requests (TSR's) submitted to MISO by Minnesota Power, Wisconsin Public Service and Manitoba Hydro. A project that is needed to be constructed in order for MISO to grant the capacity requested under the submitted TSR's is the financial responsibility of the companies submitting the TSR's, this obligation is referred to as the "participant pay model". This obligation is outlined in Attachment FF of the MISO Tariff.

Response by: Michael H. Donahue List Sources of Information:

Title: Trans. Project Development Mgr. _____

Department: Trans. Regulatory Compliance and Business Support

Telephone: 218-355-2617 _____

State of Minnesota
DEPARTMENT OF COMMERCE
DIVISION OF ENERGY RESOURCES

Utility Information Request

Docket Number: E015/CN-12-1163 Date of Request: July 8, 2014

Requested From: David Moeller Response Due: July 18, 2014

Analysts Requesting Information: Steve Rakow and Mark Johnson

Type of Inquiry:

[ ] Financial	[ ] Rate of Return	[ ] Rate Design
[ ] Engineering	[ ] Forecasting	[ ] Conservation
[ ] Cost of Service	[ ] CIP	[ ] Other:

If you feel your responses are trade secret or privileged, please indicate this on your response.

Request No.	
17	Subject: Pricing Zones and Load Share A. Please identify each MISO transmission pricing zone impacted by MP's proposed route for the Great Northern Transmission Line. B. For each transmission pricing zone identified in part A, please provide MP's estimated load ratio share. In addition, for each pricing zone identified in part A, please list all other utilities included in the pricing zone and, if available, their estimated load ratio share.

Response:

A. The Great Northern Transmission Line (GNTL) as proposed will only impact the Minnesota Power MISO Pricing Zone (MISO Pricing Zone 14).

B. In addition to Minnesota Power, Great River Energy is the only other utility with load in the Minnesota Power MISO Pricing Zone. The 2014 estimate load ratios for Minnesota Power and Great River Energy within the Minnesota Power MISO Pricing Zone are Minnesota Power 90.1% and Great River Energy 9.9%.

Response by: Michael H. Donahue List Sources of Information:

Title: Trans. Project Development Mgr. _____

Department: Trans. Regulatory Compliance and Business Support

Telephone: 218-355-2617 _____

State of Minnesota
DEPARTMENT OF COMMERCE
DIVISION OF ENERGY RESOURCES

Utility Information Request

Docket Number: E015/CN-12-1163 Date of Request: July 8, 2014

Requested From: David Moeller Response Due: July 18, 2014

Analysts Requesting Information: Steve Rakow and Mark Johnson

Type of Inquiry:

[ ] Financial	[ ] Rate of Return	[ ] Rate Design
[ ] Engineering	[ ] Forecasting	[ ] Conservation
[ ] Cost of Service	[ ] CIP	[ ] Other:

If you feel your responses are trade secret or privileged, please indicate this on your response.

Request No.	
18	Subject: Pricing Zones and Load Share Please identify each MISO transmission pricing zone in which MP has an estimated load share and the corresponding load share percentage.

Response:

Minnesota Power only has load in the Minnesota Power MISO Pricing Zone (MISO Pricing Zone 14).

Response by: Michael H. Donahue List Sources of Information:

Title: Trans. Project Development Mgr.

Department: Trans. Regulatory Compliance and Business Support

Telephone: 218-355-2617

State of Minnesota
DEPARTMENT OF COMMERCE
DIVISION OF ENERGY RESOURCES

Utility Information Request

Docket Number: E015/CN-12-1163 Date of Request: July 8, 2014

Requested From: David Moeller Response Due: July 18, 2014

Analysts Requesting Information: Steve Rakow and Mark Johnson

Type of Inquiry:

[ ] Financial	[ ] Rate of Return	[ ] Rate Design
[ ] Engineering	[ ] Forecasting	[ ] Conservation
[ ] Cost of Service	[ ] CIP	[ ] Other:

If you feel your responses are trade secret or privileged, please indicate this on your response.

Request No.	
19	Subject: Pricing Zones and Load Share A. Please identify each MISO transmission pricing zone impacted by the Winnipeg—Barnesville alternative (to the extent a route is needed please refer to Figure 1-4 on page 11 of Appendix M—Northern Area Study). B. For each transmission pricing zone identified in part A, please provide MP's estimated load ratio share. In addition, for each pricing zone identified in part A, please list all other utilities included in the pricing zone and, if available, their estimated load ratio share.

Response:

A. Minnesota Power believes the conceptual Winnipeg to Barnesville Project would impact the Otter Tail Power MISO Pricing Zone.

B. Minnesota Power has no load in the Otter Tail MISO Pricing Zone. The current 2014 load ratios for the Otter Tail Pricing Zone are as follows: Otter Tail Power 73.72%, Missouri River Energy 11.57% and Great River Energy 15.69%

Response by: Michael H. Donahue List Sources of Information:

Title: Trans. Project Development Mgr. _____

Department: Trans. Regulatory Compliance and Business Support

Telephone: 218-355-2617 _____

LARGE POWER INTERVENORS

Utility Information Request

Docket Number: E015/CN-12-1163 Date of Request: May 19, 2014

Requested From: Large Power Intervenors Response Requested: May 30, 2014

By: Large Power Intervenors (Andrew Moratzka, Chad T. Marriott , Lane Kollen and Phil Hayet)

Request No.	
002	Please provide a copy of the Company's base case cost estimate(s) and all sensitivity cost estimates prepared by varying key assumptions for the project shown by month and separated into direct expenditures, contingencies, and AFUDC by major component, e.g., design and engineering, right of way acquisition, etc. Provide all relevant assumptions, data, and computations, including electronic spreadsheets with formulas intact.

Response:

Please find attached support documentation the base estimate for the Great Northern Transmission Line Project. Minnesota Power has filed with the Minnesota Public Utilities Commission a Route Permit which has identified two potential routes; the MPUC will have the final approval of the route segments. The estimates included here assume the line will be constructed on the Blue route as filed with the MPUC. The final route selection will have impact on the estimate. The estimate included here is shown in 2013 dollars and has no AFDC applied.

Minnesota Power has included the total project estimate for the Great Northern Transmission Line, detailed as follows;

500 kV Transmission Line	$ 537,032,286
Blackberry 500/230 kV Substation	$ 45,080,200
GNTL 500 kV Series Compensation Station	$ 27,203,000
Minnesota Power 230 kV Modifications	$ 4,579,211
	$ 613,894,697

LARGE POWER INTERVENORS

Utility Information Request

Docket Number: E015/CN-12-1163 Date of Request: May 19, 2014

Requested From: Large Power Intervenors Response Requested: May 30, 2014

By: Large Power Intervenors (Andrew Moratzka, Chad T. Marriott , Lane Kollen and Phil Hayet)

Request No.

Response *(Continued):*

The attached spreadsheet "GNTL RPA Detailed Estimate 4 09 2014.xlsx" includes tabs for each of the above categories. Each tab (TRADE SECRET INFORMATION) provides details which outlines the estimate for each category.

Minnesota Power has also included in this response is a month and yearly cash flow for each of the line items shown above. "GNTL cash flow 4-14-14 based on RPA Estimate.xlsx" Minnesota Power will be reviewing this estimate as facts change, including providing revised cash flow as once the detailed engineering progresses.

Response by: Michael Donahue List Sources of Information:

Title: Trans. Project Development Mgr.

Department: Trans. Regulatory Compliance and Business Support

Telephone: 218-355-2617

GNTL Project Estimate Summary
Accumulated by MH Donahue

4/9/2014

		Blue Route
Miles for Blue Route		222.52
		Est. (2013$)
Material & Construction	$	-
Engineering and Program Management	$	-
Construction Phase Contingency	$	-
500 kV Line Materials & Construction	$	-
MP Internal Services	$	-
Professional Permitting Support	$	-
ROW Acquisition Support	$	-
Land & Land Rights	$	30,220,767
500 kV Transmission Line	$	30,220,767
500/230 kV Substation Materials & Construction	$	-
MP Internal & Professional Services	$	-
Land & Land Rights	$	500,000
Blackberry 500/230 kV Substation	$	500,000
500 kV Series Compensation Materials & Construction	$	24,480,000
Land & Land Rights	$	250,000
GNTL 500 kV Series Compensation Station	$	24,730,000
230 kV Modifications Transmission Line Materials & Construction	$	-
230 kV Modifications Substation Materials & Construction	$	-
Land & Land Rights	$	-
Minnesota Power 230 kV Modifications	$	-
TOTAL PROJECT	$	55,450,767
PROJECT CONTINGENCY (10%)	$	5,545,077
TOTAL ESTIMATED COST (2013$)	$	60,995,844
Project Estimate with Contingency Allocated		
500 kV Transmission Line	$	33,242,844
Blackberry 500/230 kV Substation	$	550,000
GNTL 500 kV Series Compensation Station	$	27,203,000
Minnesota Power 230 kV Modifications	$	-
	$	60,995,844

Project Funding Sources 2013 Dollars

Minnesota Power Base Investment 33.3%	$	20,311,616
Minnesota Power Renewable Optimization Investment 17.7%	$	10,796,264
Total Minnesota Power -51%	$	31,107,880
Manitoba Hydro Portion - 49%	$	29,887,964
Total Project	$	613,843,176

4/9/2014

Great Northern Transmission Line Project Preferred Route Estimate - Blue Route	Estimate	Category	Phase Total
Internal and Professional Servioes			
MP Internal Services	[TRADE SECRET DATA EXCISED]		
Project Manager			
T Line Engineer			
Substation Engineer			
System Planner			
Land			
Environmental			
Legal			
Project Controls			
Project Admin			
Travel			
Expenses			
Public Outreach			
Permit Fees			
Development Contingency			
Total MP Internal Services			
Professional Services			
HDR -			
3rd Party DOE			
Preliminary Engineering			
Legal - Permitting			
Permitting Support			
Right-of-way Agent			
Legal - Land Acquisition			
ROW Acquisition Support			
Land and Land Rights			
Easement Payments			
Crop Damage Payments			
Wetland Offset Payment			
Total Land and Land Rights			
Internal and Professional Services			

Material & Construction

Hardware & Insulator: Material	[TRADE SECRET DATA EXCISED]
Steel Structure: Material	
Steel Structure: Labor	
Foundation: Material	
Foundation: Labor	
Guy: Material	
Anchorage: Guyed V Material	
Anchorage: Guyed V Labor	
Helical Pedestal and Stub Angle Cap: SS Lattice Material	
Helical Pedestal and Stub Angle Cap: SS Lattice Labor	
Conductor: Material	
Conductor: Labor	
Guard Structures for Installing Wires: Labor	
OHGW: Material	
OHGW: Labor	
OPGW Cable: Material	
OPGW Cable: Labor	
Fiber Optic Splicing: Labor	
OPGW Splice: Material	
Flight Diverters / Aerial Marker Balls: Labor	
Flight Diverters / Aerial Marker Balls: Material	
Grounding: Material	
Grounding: Labor	
Matting: Material	
Matting: Labor	
Culverts: Material	
Culverts: Labor	
BMP measures:	
Restoration	
Receive, Unload and Yard Owner Materials	
Material Storage Yards:	
Project Field Office:	
Access Road Construction: Labor	
ROW Clearing: Labor	
OPGW Regeneration Site: Material	
OPGW Regeneration Site: Labor	
Sounding (determine bearing depth): Labor	
Mobilization	
Total Material & Construction	

Engineering and Program Management	[TRADE SECRET DATA EXCISED]
Engineering and Support (includes lydar)	
Geotech	
Owner provided Construction / Structure Survey	
Project Management	
Contractor - Construction Management	
Contract - Construction Inspection	
Contract - Compliance Monitors (environmental)	
Equipment / Materials Sales Tax	
Insurance / bonding	
Total Engineering and Program Management	
Construction Phase Contingency	
Total Construction Phase	
Total Great Northern Transmission Line	

GNTL Project Estimate 4/9/2014
Blackberry 500/230 kV Subsation

DESCRIPTION	Labor and Material
	[TRADE SECRET DATA EXCISED]
Equuipment (outdoor)	
Strucutres (tubular steel)	
Foundations	
Cable & Conduit	
Control House	
Site Improvements	
Testing & Energization	
Subtotal	
Contractor Mob/Demob	
Construction Management	
Engineering	
Contingency	
500/230 kV Substation Materials & Construction	
Land and Land Rights	
TOTAL ESTIMATED COST	

GNTL Project Estimate 4/9/2014
GNTL 500 kV Series Compenstion Station

DESCRIPTION	2013 Dollars
ESTIMATED COST SUMMARY	[TRADE SECRET DATA EXCISED]
500KV Series Comp (EPC)	
500KV Series Comp (CM)	
500KV Series Comp (OE)	
Land and Land Rights	
Contingency	
TOTAL ESTIMATED COST	

GNTL Project Estimate 4/9/2014
GNTL 230 kV System Modification

T-Line Revisions For GNTL Project

230 kV Line Portion	Additions
Total Material Cost	[TRADE SECRET DATA EXCISED]
R/W Acquisition	
Engineering / Project Management Labor (MP)	
Contract - Geo Tech / Foundation Eng	
Contract - Clearing	
Contract - Survey (Lidar / Staking)	
Contract - Inspection (API)	
Contract - Foundations	
Contract - Line Construction	
Contract - R/W Restoration	
Contingency	
Total Direct Cost	

Substation Revisions For GNTL Project

Relay Panel Upgrades	[TRADE SECRET DATA EXCISED]
Blackberry 230 kV Subsation	
Arrowhead 230 kV Substation	
Forbes 230 kV Substation	
Hilltop 230 kV Subsation	
Total Substation Upgrades	

GNTL

500kV Estimate of Costs - Segment Route Options

Date: 3/21/2014 Rev: E

ASSUMPTIONS

[TRADE SECRET DATA EXCISED]

SEGMENT SPECIFIC INFORMATION

No	Segment Name		Mi	Structure Type	Str Qty
6	Orange/Blue 1	PQ	40.03	self supporting-65% guyed V-35%	159
11	Blue 3	RS	46.62	guyed V-100%	177
14	Orange/Blue 2	QR	25.63	guyed V-100%	109
15	Blue 4	Sta	32.85	guyed V-100%	126
18	Blue 5	TN	32.96	guyed V-100%	115
19	Blue 6	NO-26 (BLUE)	44.44	guyed V-100%	169
			223 mi		**0,855 str's**

PARALLEL CORRIDORS					
No	Segment Name	Corridor Type	Structure Type Used	Spans	Length
6	PQ	Parrallel 230kV	Self Supporting Lattice	1,400 ft	2.0 miles
6	PQ	Parrallel 500kV	Guyed V Lattice	1,250 ft	10.5 miles
10	RU	Parrallel 500kV	Guyed V Lattice	1,250 ft	23.5 miles
11	RS	Parrallel 230kV	Guyed V Lattice	1,400 ft	46.5 miles
19	NO-OR	Parrallel 230kV	Guyed V Lattice	1,400 ft	9.5 miles
14	QR	Parrallel 500kV	Guyed V Lattice	1,250 ft	25.5 miles
18	TN	Parrallel 230kV	Guyed V Lattice	1,400 ft	12.7 miles
19	NO-BL	Parrallel 230kV	Guyed V Lattice	1,400 ft	4.0 miles

LAND USE BY SEGMENT									
Segment ID No		Farmland	Hayland Pasture	Shrubland	Wetlands	Forested Wetlands	Forest	Other	
6	PQ	28%	5%	16%	25%	18%	7%	1%	
11	RS	4%	3%	0%	33%	55%	3%	1%	
14	QR	3%	3%	3%	20%	67%	4%	1%	
15	Sta	0%	1%	1%	6%	82%	10%	1%	
18	TN	0%	1%	3%	7%	59%	30%	2%	
19	NO-26 (BLUE)	0%	0%	3%	5%	41%	49%	2%	

STRUCTURE SPECIFIC INFORMATION			
STRUCTURE TYPE	WEIGHT	Helical Pile Depths in Wetlands	CIP Foundations in Uplands
500kV Tangent-SC (Guyed Mast Lattice)	18,600 lbs	30ft	20ft Depth - Helical
500kV Tangent-SC (Lattice)	27,800 lbs	30ft	3ft x 25ft
500kV Light Angle-SC (Lattice)	35,300 lbs	30ft	4ft x 27ft
500kV MA Dead End-SC (Lattice)	56,780 lbs	30ft	5ft x 29ft
500kV HVY Dead End-SC (Lattice)	86,600 lbs	30ft	6ft x 31ft
utilized helical screw in anchorage for self supporting lattice structures in wetlands			
utilized cast in place concrete foundations for self supporting lattice structures in uplands			

500kV STRUCTURE TYPES CONSIDERED IN VARIOUS LAND USE AREAS	
500kV Tangent-SC (Guyed Mast Lattice)	Secondary 500kV str - to be used in parrallel corridors, wetlands and wooded wetlands; or limited use areas where the overall footprint is not the larger concern
500kV Tangent-SC (Lattice)	Primary 500kV str - to be used in non wetlands areas to minimize footprint to agricultural or residential areas
500kV Light Angle-SC (Lattice)	Primary 500V str - to be used in all areas for running angles
500kV MA Dead End-SC (Lattice)	Primary 500kV str - to be used in all areas for light dead ends
500kV HVY Dead End-SC (Lattice)	Primary 500kV str - to be used in all areas for heavy dead ends

TREE CLEARING ALLOWED						
allowed for full width ROW tree clearing in all wooded wetlands and forested areas						
Segment ID No		Length of Clearing Required (feet)	(miles)	(acres)	Number of Spans	Percentage of Segment Requiring Clearing
6	PQ	54,706 ft	10.36 mi	314 acres	71	45%
11	RS	143,806 ft	27.24 mi	825 acres	151	85%
14	QR	95,550 ft	18.10 mi	548 acres	98	90%
15	Sta	159,991 ft	30.30 mi	918 acres	126	100%
18	TN	154,560 ft	29.27 mi	887 acres	115	89%
19	NO-26 (BLUE)	210,909 ft	39.94 mi	1,210 acres	165	98%

AERIAL MARKER BALLS AND BIRD FLIGHT DIVERTERS INCLUDED		
aerial marker balls	74 spans	allowed for marker balls based on 1 span per each 7 mile section of line
bird flight diverters	1,743 spans (of a possible 1,993)	allowed for diverters in all wetlands, wooded wetlands and forest areas in all segments

STORAGE YARDS INCLUDED		
Line Section	storage yards	location
500Kv	6	located at nearest towns along alignment
at this time did not allow for - but would consider 36 month rental duration for all yards		

PROJECT MANAGEMENT OFFICE FACILITIES AND PROJECT SUPPORT STAFF
did not inlcude costs for project office location with a duration of 36 months
costs include office and utilities, receptionist, staff assistants, superintendent, project manager, safety coordinator, material coordinator, schedule coordinator
if these are to be included the cost allowed for this is $6.8M over the 3 year period

CONSTRUCTION INSPECTION
allowed for 10 construction inspectors with a duration of 36 months

COMPLIANCE MONITORS
allowed for 6 environmental compliance monitors with a duration of 36 months

ROW MATTING ALLOWED				
used average cost per mile to purchase, install and move four times - applied to all wetlands sections - allowed double matting throughout				
lengths considered for matting per section are listed below				
Segment ID No		Wetlands and Wooded Wetlands lengths	Assumption used for Matting Costs	
6	PQ	17.5 mi		
11	RS	41.3 mi		
14	QR	22.3 mi	Cost per mile for labor for install and move to new location	$362,057
15	Sta	28.9 mi		
18	TN	21.6 mi		
19	NO-26 (BLUE)	20.4 mi		

BRIDGE MATTING ALLOWED (4'x12"x30')
90 mats purchased at price of $2500 each
labor cost for placement and 1 removal of matting at price of $500 per mat
allowed for mats to be placed and removed to 2 locations
allowed for matting to be installed a total of 95 locations

APPROACH W/CULVERT INCLUDED
allowed for 180 approaches to be installed - from road ways to ROW

ACCESS
considered overland travel on ROW in areas that were farmland, hayland, pasture and shrubland
considered permanent access road system to be developed in forested areas
did not allow for permanent access road system in wetlands or wooded wetlands (typical access is matting)

BMP'S ALLOWED FOR
silt fence - allowed for silt fencing at all approaches - 2 per approach (25ft length ea)
wattle barrier -allowed for wattles at all approaches - 2 per approach (25ft length ea)
mulch and seed - in all pasture and shrub brush land use areas
deep chisel - in all farmland and pasture land use areas
restoration - tower site: allowed for full restoration at all tower locations
restoration - full span: allowed for full span restoration costs in all spans

CONDUCTOR INSTALLATION COSTS INCLUDED
allowed for H frame guard structures at crossings

OWNER MATERIALS RECEIVED AND YARDED BY CONTRACTOR
did not include costs in estimate to receive and yard 500kV materials - but have cost of $2.3M for this task over a two year period
did not include costs for material storage yards and work show ups - but have cost of $1.1M for this cost over a three year period

Prepared by: Mdonahue
Date: April 14 2014

Great Northern Transmission Line
Preliminary Cash Flow
April 2014

	2013	2014	2015	2016	2017	2018	2019	2020	Totals
Certification Phase	4,468,849	5,588,081	3,437,003	2,866,670	1,434,547	1,343,546	3,570,316	675,054	23,384,067
Line Construction	-	500,807	6,374,374	60,257,054	150,045,503	172,336,836	101,569,916	22,563,730	513,648,220
Blackberry 500/230 kV Substation	-	-	-	-	396,474	10,648,494	29,190,284	4,844,949	45,080,200
GNTL Series Comp Station	-	-	-	-	239,246	6,425,681	17,614,458	2,923,615	27,203,000
230 kV System Improvements	-	-	-	-	40,273	1,081,666	2,965,126	492,146	4,579,211
Total Project	4,468,849	6,088,888	9,811,377	63,123,724	152,156,043	191,836,222	154,910,099	31,499,494	613,894,697
Minnesota Power	2,279,113	3,105,333	5,003,802	32,193,099	77,599,582	97,836,474	79,004,151	16,064,744	313,086,299
MH	2,189,736	2,983,555	4,807,575	30,930,625	74,556,461	93,999,749	75,905,948	15,434,750	300,808,399
Total Project ($2013)	4,468,849	6,088,888	9,811,377	63,123,724	152,156,043	191,836,222	154,910,099	31,499,494	613,894,697

	Year End 2013	Forecast ->	Forecast ->	Forecast ->	Forecast ->	Forecast ->	Forecast ->	Forecast ->	Forecast ->	Forecast ->	Forecast ->
	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	**Oct-14**
Certification Phase	4,468,849	32,340	417,165	451,684	537,171	537,171	537,171	557,348	557,348	557,348	467,779
Line Construction								77,047	77,047	77,047	77,047
Line Construction								0.02%	0.02%	0.02%	0.02%
Blackberry 500/230 kV Substation											-
GNTL Series Comp Station											
											0.00%
230 kV System Improvements											-
Total Project	4,468,849	32,340	417,165	451,684	537,171	537,171	537,171	634,395	634,395	634,395	544,826
Minnesota Power	2,279,113	16,493	212,754	230,359	273,957	273,957	273,957	323,542	323,542	323,542	277,861
MH	2,189,736	15,846	204,411	221,325	263,214	263,214	263,214	310,854	310,854	310,854	266,965
	4,468,849	32,340	417,165	451,684	537,171	537,171	537,171	634,395	634,395	634,395	544,826

	Forecast ->	Forecast ->	Forecast ->	Forecast ->	Forecast ->	Forecast ->	Forecast ->	Forecast ->
	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15
Certification Phase	467,779	467,779	435,833	297,828	297,828	268,100.00	268,100.00	268,100.00
Line Construction	92,457	100,161	102,730	154,094	154,094	205,459	256,824	654,901
Line Construction	0.02%	0.02%	0.02%	0.03%	0.03%	0.04%	0.05%	0.13%
Blackberry 500/230 kV Substation	-	-	-	-	-	-	-	-
GNTL Series Comp Station	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
230 kV System Improvements	-	-	-	-	-	-	-	-
Total Project	560,236	567,940	538,563	451,923	451,923	473,559	524,924	923,001
Minnesota Power	285,720	289,650	274,667	230,481	230,481	241,515	267,711	470,731
MH	274,515	278,291	263,896	221,442	221,442	232,044	257,213	452,271
	560,236	567,940	538,563	451,923	451,923	473,559	524,924	923,001

	Forecast ->	Forecast ->	Forecast ->	Forecast ->	Forecast ->	Forecast ->	Forecast ->
	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16
Certification Phase	269,405	269,405	269,405	264,333	264,333	264,333	261,386
Line Construction	698,562	742,222	785,882	829,542	873,202	916,862	2,107,935
Line Construction	0.14%	0.14%	0.15%	0.16%	0.17%	0.18%	0.41%
Blackberry 500/230 kV Substation	-	-	-	-	-	-	-
GNTL Series Comp Station	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
230 kV System Improvements	-	-	-	-	-	-	-
Total Project	967,966	1,011,626	1,055,286	1,093,875	1,137,535	1,181,195	2,369,321
Minnesota Power	493,663	515,929	538,196	557,876	580,143	602,409	1,208,354
MH	474,303	495,697	517,090	535,999	557,392	578,786	1,160,967
	967,966	1,011,626	1,055,286	1,093,875	1,137,535	1,181,195	2,369,321

	Forecast ->	Forecast ->	Forecast ->	Forecast ->	Forecast ->	Forecast ->	Forecast ->
	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16
Certification Phase	261,386	261,386	258,736	258,736	258,736	217,718	217,718
Line Construction	2,453,666	7,807,439	4,612,413	6,551,467	2,389,667	6,906,856	5,155,923
Line Construction	0.48%	1.52%	0.90%	1.28%	0.47%	1.34%	1.00%
Blackberry 500/230 kV Substation	-	-	-	-	-	-	-
GNTL Series Comp Station	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
230 kV System Improvements	-	-	-	-	-	-	-
Total Project	2,715,052	8,068,825	4,871,149	6,810,203	2,648,403	7,124,574	5,373,641
Minnesota Power	1,384,677	4,115,101	2,484,286	3,473,204	1,350,685	3,633,533	2,740,557
MH	1,330,376	3,953,724	2,386,863	3,337,000	1,297,717	3,491,041	2,633,084
	2,715,052	8,068,825	4,871,149	6,810,203	2,648,403	7,124,574	5,373,641

	Forecast ->	Forecast ->	Forecast ->	Forecast ->	Forecast ->	Forecast ->	Forecast ->
	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17
Certification Phase	217,718	217,718	217,718	217,718	129,748	129,748	129,748
Line Construction	9,025,134	6,817,338	4,113,303	2,315,911	8,904,757	7,872,403	13,276,399
Line Construction	1.76%	1.33%	0.80%	0.45%	1.73%	1.53%	2.58%
Blackberry 500/230 kV Substation	-	-	-	-	-	-	-
GNTL Series Comp Station	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
230 kV System Improvements	-	-	-	-	-	-	-
Total Project	9,242,852	7,035,055	4,331,020	2,533,628	9,034,505	8,002,151	13,406,147
Minnesota Power	4,713,854	3,587,878	2,208,820	1,292,150	4,607,598	4,081,097	6,837,135
MH	4,528,997	3,447,177	2,122,200	1,241,478	4,426,908	3,921,054	6,569,012
	9,242,852	7,035,055	4,331,020	2,533,628	9,034,505	8,002,151	13,406,147

	Forecast ->	Forecast ->	Forecast	Forecast	Forecast	Forecast	Forecast
	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17
Certification Phase	116,145	116,145	116,145	116,145	116,145	116,145	116,145
Line Construction	16,057,701	15,281,035	28,011,026	5,904,871	3,429,302	11,495,183	13,699,576
Line Construction	3.13%	2.98%	5.45%	1.15%	0.67%	2.24%	2.67%
Blackberry 500/230 kV Substation	19,985	17,330	12,138	14,450	194,513	25,593	37,489
GNTL Series Comp Station	12,060	10,458	7,324	8,720	117,376	15,443	22,622
	0.04%	0.04%	0.03%	0.03%	0.43%	0.06%	0.08%
230 kV System Improvements	2,030	1,760	1,233	1,468	19,758	2,600	3,808
Total Project	16,207,921	15,426,728	28,147,866	6,045,653	3,877,093	11,654,963	13,879,639
Minnesota Power	8,266,040	7,867,631	14,355,412	3,083,283	1,977,318	5,944,031	7,078,616
MH	7,941,881	7,559,097	13,792,454	2,962,370	1,899,776	5,710,932	6,801,023
	16,207,921	15,426,728	28,147,866	6,045,653	3,877,093	11,654,963	13,879,639

	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18
Certification Phase	116,145	116,145	111,962	111,962	111,962	111,962.13	111,962.13
Line Construction	12,614,720	13,498,531	14,669,465	13,428,167	8,708,915	12,097,554	18,884,462
Line Construction	2.46%	2.63%	2.86%	2.61%	1.70%	2.36%	3.68%
Blackberry 500/230 kV Substation	37,489	37,489	37,489	37,489	37,489	86,253	86,253
GNTL Series Comp Station	22,622	22,622	22,622	22,622	22,622	52,048	52,048
	0.08%	0.08%	0.08%	0.08%	0.08%	0.19%	0.19%
230 kV System Improvements	3,808	3,808	3,808	3,808	3,808	8,761	8,761
Total Project	12,794,783	13,678,594	14,845,345	13,604,048	8,884,796	12,356,578	19,143,486
Minnesota Power	6,525,340	6,976,083	7,571,126	6,938,065	4,531,246	6,301,855	9,763,178
MH	6,269,444	6,702,511	7,274,219	6,665,984	4,353,550	6,054,723	9,380,308
	12,794,783	13,678,594	14,845,345	13,604,048	8,884,796	12,356,578	19,143,486

	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18
Certification Phase	111,962.13	111,962.13	111,962.13	111,962.13	111,962.13	111,962.13	111,962
Line Construction	16,567,442	13,349,802	11,780,091	16,825,562	15,144,267	15,236,349	15,644,760
Line Construction	3.23%	2.60%	2.29%	3.28%	2.95%	2.97%	3.05%
Blackberry 500/230 kV Substation	86,253	1,944,820	2,122,361	1,968,821	1,968,821	1,436,203	836,245
GNTL Series Comp Station	52,048	1,173,574	1,280,708	1,188,057	1,188,057	866,656	504,620
	0.19%	4.31%	4.71%	4.37%	4.37%	3.19%	1.86%
230 kV System Improvements	8,761	197,553	215,588	199,991	199,991	145,888	84,945
Total Project	16,826,466	16,777,711	15,510,710	20,294,394	18,613,099	17,797,058	17,182,532
Minnesota Power	8,581,498	8,556,632	7,910,462	10,350,141	9,492,680	9,076,500	8,763,091
MH	8,244,968	8,221,078	7,600,248	9,944,253	9,120,418	8,720,558	8,419,441
	16,826,466	16,777,711	15,510,710	20,294,394	18,613,099	17,797,058	17,182,532

	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast
	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19
Certification Phase	114,247	114,247	114,247	114,247	114,247	114,247	109,647	109,647	109,647	851,965
Line Construction	13,183,209	9,089,862	7,002,286	7,496,622	11,752,600	4,669,367	4,564,564	5,136,482	10,610,190	10,242,734
Line Construction	2.57%	1.77%	1.36%	1.46%	2.29%	0.91%	0.89%	1.00%	2.07%	1.99%
Blackberry 500/230 kV Substation	1,068,613	15,612,567	802,193	761,776	1,405,824	783,984	828,402	1,391,020	1,391,020	1,391,020
GNTL Series Comp Station	644,839	9,421,180	484,072	459,683	848,325	473,084	499,887	839,391	839,391	839,391
	2.37%	34.63%	1.78%	1.69%	3.12%	1.74%	1.84%	3.09%	3.09%	3.09%
230 kV System Improvements	108,549	1,585,912	81,486	77,381	142,803	79,636	84,148	141,299	141,299	141,299
Total Project	15,119,456	35,823,769	8,484,284	8,909,707	14,263,798	6,120,319	6,086,648	7,617,839	13,091,547	13,466,409
Minnesota Power	7,710,923	18,270,122	4,326,985	4,543,951	7,274,537	3,121,363	3,104,190	3,885,098	6,676,689	6,867,869
MH	7,408,534	17,553,647	4,157,299	4,365,757	6,989,261	2,998,956	2,982,458	3,732,741	6,414,858	6,598,540
	15,119,456	35,823,769	8,484,284	8,909,707	14,263,798	6,120,319	6,086,648	7,617,839	13,091,547	13,466,409

	Forecast Nov-19	Forecast Dec-19	Forecast Jan-20	Forecast Feb-20	Forecast Mar-20	Forecast Apr-20	Forecast May-20	Forecast Jun-20		Forecast Grand Total
Certification Phase	851,965	851,965	70,230	70,230	70,230	154,788	154,788	154,788		23,384,067
Line Construction	9,117,566	8,704,432	7,235,808	5,148,853	2,678,994	2,665,834	2,670,971	2,163,273		513,648,219
Line Construction	1.78%	1.69%	1.40%	1.00%	0.52%	0.52%	0.52%	0.44%		100.00%
Blackberry 500/230 kV Substation	1,830,263	1,923,602	1,585,657	1,390,649	997,116	865,201	3,162	3,162		45,080,200
GNTL Series Comp Station	1,104,446	1,160,770	956,842	839,167	601,695	522,093	1,908	1,908		27,203,000
	4.06%	4.27%	3.52%	3.08%	2.21%	1.92%	0.01%	0.01%		
230 kV System Improvements	185,917	195,398	161,070	141,261	101,286	87,886	321	321		4,579,211
Total Project	13,090,157	12,836,167	10,009,607	7,590,161	4,449,321	4,295,804	2,831,151	2,323,453	-	613,894,697
Minnesota Power	6,675,980	6,546,445	5,104,900	3,870,982	2,269,154	2,190,860	1,443,887	1,184,961	-	313,086,295
MH	6,414,177	6,289,722	4,904,708	3,719,179	2,180,167	2,104,944	1,387,264	1,138,492	-	300,808,403
	13,090,157	12,836,167	10,009,607	7,590,161	4,449,321	4,295,804	2,831,151	2,323,453	-	613,894,698

LARGE POWER INTERVENORS

Utility Information Request

SUPPLEMENTAL

Docket Number: E015/CN-12-1163 Date of Request: May 19, 2014

Requested From: Large Power Intervenors Response Requested: May 30, 2014

By: Large Power Intervenors (Andrew Moratzka, Chad T. Marriott , Lane Kollen and Phil Hayet)

Request No.	
003	Please provide a detailed description of the scheduling fee arrangement that the Company claims will reduce the cost to customers from the 51.0% proposed MP ownership to 33.3% of the cost. Provide a copy of all documents, draft or otherwise, that were relied on for the concept and/or that will be used to implement the arrangement.
004	Please provide the Company's quantification of the effects of the project on customer rates, including, but not limited to, the derivation of the revenue requirement, all of the relevant class billing determinants, and the effects of the scheduling fee arrangement. Provide all assumptions, data, and computations, including electronic spreadsheets with formulas intact, e.g., revenue requirements model, class cost of service model, etc.

Supplemental Response:

Minnesota Power and Manitoba Hydro (MH) recently completed negotiation on several agreements which among other items outlines the financial responsibility for the construction and operation of the Great Northern Transmission Line (Project). The Renewable Optimization Agreements (ROA) have been executed by both companies. The MISO Facilities Construction Agreement (FCA) has been submitted to MISO for their review. Once MISO has completed their review the FCA will be executed and submitted to FERC for approval. FERC approval is expected within 60 days of submittal. The paragraphs below summaries the business structure detailed in those agreements. For ease of review, references to Manitoba Hydro also encompass its subsidiary, 6690271 Manitoba Ltd.

As agreed to in the FAC, Minnesota Power will own 51% of the Project, while MH will own the 49% balance as tenants in common. However, MH does not intend to be an owner of the Project past mid-year 2016. MH is reviewing ownership options with another Minnesota MISO Transmission Owner however if that option does not materialize, Minnesota Power will assume 100% of the Project as of mid-year 2016. MH or its Assignee will be financial responsible for 49% of all ongoing Operation and Maintenance expense associated with the Project.

While Minnesota Power is a 51% owner of the Project, Minnesota Power has only a 46% funding obligation for construction cost. MH will provide the balance (54%) of construction funds either through Contribution in Aid of Construction (CIAC) payments (if Minnesota Power becomes the 100% owner), or a 5% CIAC payment and the assignment of 49% to another Minnesota MISO Transmission Owner.

Please refer to the table below which has been prepared using the estimates included in Appendix A of the FCA.

Funding Option	Total Project Cost	MP Responsibility	MH-CIAC	MH-Assignment
100% MP Ownership	$ 676,242,900	$ 311,071,700	$ $365,171,200	
Assignment	$ 676,242,900	$ 311,071,700	$ $33,812,100	$ 331,359,100

The Minnesota Power funding obligation percentage is a product of Minnesota Powers requested capacity of the Project (383 MW) over the total requested capacity of the Project (883 MW). The Minnesota Power requested capacity consists of two capacity requests to MISO. Minnesota Power requested 250 MW of capacity to provide a transmission path for the 250 MW PPA between Minnesota Power and Manitoba Hydro (previously approved by the Commission) and a 133 MW request to provide a transmission path for the ROA.

The Minnesota Power funding obligation can be broken down as shown in the following table:

Capacity Request	Percentage of Total	Pro Rata Share
250 MW PPA	28.3%	$ 191,376,700
133 MW ROA	17.7%	$ 119,695,000
Total Minnesota Power	**46.0%**	**$ 311,071,700**

Minnesota Power plans to include all cost associated with our funding obligation in a future Transmission Cost Recovery Rider for retails rates and through our MISO Attachment O process for wholesale customers. Under the terms of the Renewable Optimization Agreements, Manitoba Hydro will provide a "Must Take Fee" which will be in excess of the pro rata revenue requirements associated with the 133 MW capacity request. This "Must Take Fee" credit will be included as an offset to revenue requirements in both the Transmission Cost Recovery Rider and the MISO Attachment O.

Details on when the applicable filings will be made has not yet been determined.

Response by: David Moeller
Title: Senior Attorney
Department: Corporate Legal Services
Telephone: 218-723-3963

List Sources of Information: