PUBLIC DOCUMENT: TRADE SECRET DATA HAS BEEN EXCISED

Supplemental Direct Testimony and Schedules
Steven W. Wishart

Before the North Dakota Public Service Commission
State of North Dakota

In the Matter of the Application of Northern States Power Company
for Authority to Increase Rates for Electric Service in North Dakota

Case No. PU-12-813
Exhibit___(SWW-1)

Recovery of Prairie Rose Wind Purchased Power Agreement Costs

April 3, 2013

Table of Contents

Schedules

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND OCCUPATION.

A. My name is Steven W. Wishart. I am the Director of Resource Planning and Bidding for Xcel Energy Services Inc. (XES).

Q. PLEASE DESCRIBE YOUR QUALIFICATIONS AND EXPERIENCE.

A. I have worked for Xcel Energy since 2005 in the areas of demand-side management and resource planning. In my current role, I am responsible for the direction and oversight of electric Resource Planning for the five-state integrated Northern States Power Company system (NSP System), which provides electric service to customers in Michigan, Minnesota, North Dakota, South Dakota, and Wisconsin.

My responsibilities include assisting the Company in making reasonable and prudent resource acquisition decisions for generation resources. I maintain our resource planning model, Strategist, and conduct economic evaluations of resource additions and bid processes for new resource acquisitions. My resume is provided as Exhibit___(SWW-1), Schedule 1.

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

A. My testimony is intended to provide the additional record information contemplated in the Commission's December 21, 2012 FINDINGS OF FACT, CONCLUSIONS OF LAW AND ORDER (Order) in Case No. PU-12-59. In that Order, the Commission required a thorough record be developed in further proceedings regarding whether the costs of the Prairie Rose Wind (PRW) Purchased Power Agreement should be recovered from North Dakota

ratepayers, and if so, how much. The Commission indicated it intended this rate case to be utilized as the further proceedings ordered in Case No. PU-12-59.

My testimony demonstrates that the PRW PPA is prudent, and meets the prudence standard by which the Commission generally assesses the reasonableness of the utility's generation investments or resource additions at the time the investment was made. The PRW PPA was and continues to be a prudent resource addition that will provide North Dakota customers cost-effective energy diversity and price stability over a 20-year term. Therefore, its costs should be recovered through the Company's Fuel Cost Rider tariff.

Q. HOW IS YOUR TESTIMONY ORGANIZED?

A. I provide information, discussion, and context that I believe will help the Commission understand the current ratemaking framework for resource additions and how the PRW PPA meets the framework established in the Commission's rules and our tariff. I also discuss ratemaking implications should the Commission decide to vary from its existing framework. Specifically, my testimony is organized as follows:

- Overview of the Prairie Rose PPA;
- The current North Dakota fuel and purchased energy cost recovery framework and mechanism;
- How the PRW PPA, as part of the integrated NSP System resource portfolio, provides value to North Dakota customers; and
- The implications of excluding a specific resource, such as PRW, from the established cost recovery mechanism for NSP System resources.

II. THE PRAIRIE ROSE TRANSACTION OVERVIEW

Q. PLEASE BRIEFLY DESCRIBE THE PRW PPA.

A. The PRW PPA is a 200 MW power purchase agreement between the Company and Prairie Rose Wind Farm, LLC, a subsidiary of Geronimo Wind (now Geronimo Energy). The PRW PPA will provide approximately 726 GWh annually at a fixed price of **[BEGIN TRADE SECRET END TRADE SECRET]** that escalates annually at a fixed rate. In addition to energy, the contract also provides Renewable Energy Credits (RECs). These RECs can be used to demonstrate compliance with renewable objectives, or sold to other utilities or entities, and the proceeds used to create additional customer value. The PRW PPA was selected as the best available resource in the Company's 2010 Request for Proposal process to obtain cost-effective wind generation resources for the NSP System.

Q. HOW DID THE COMPANY CONCLUDE THAT THE 200 MW PRW PPA WAS THE BEST WIND RESOURCE OPTION AVAILABLE?

A. The Company seeks to optimize its resource mix and acquire cost effective generation while considering a variety of circumstances. Wind generation not only provides an appropriate hedge against fuel price volatility, it can also be a cost-effective alternative in its own right.

In 2010 the Company saw the prices for new wind generation projects decline, based in part on the downward pricing pressure from lower natural gas prices. At the same time, it appeared that federal Production Tax Credits would expire at the end of 2012. To capture the benefit of the PTCs and lower wind prices, we determined we would need to move promptly to identify potential

cost-effective wind proposals that could be in-service by the end of 2012.

To ensure the lowest price energy resource, the Company issued an RFP in late 2010 for wind resources in the upper Midwest region. In response, we received over 100 proposals for projects that could be located in North Dakota, South Dakota, and Minnesota. Of the projects able to demonstrate adequate transmission pathways and an ability to complete construction in 2012, PRW offered the lowest priced contract.

As discussed in our application for an Advanced Determination of Prudence (ADP) for the PPA in Case No. PU-12-59, the Company conducted long-range simulations using the Strategist planning model to estimate the net present value of the PRW PPA. Even using conservative assumptions regarding wind integration costs and curtailments, the simulations estimated the contract to be a breakeven proposal. Therefore, the PRW PPA presented the Company with the opportunity to replace approximately 726 GWh of volatile priced energy from natural gas and the spot energy market with fixed price energy at zero net cost.

Q. DO YOU CONTINUE TO BELIEVE THAT THE PRW PPA IS A COST-EFFECTIVE RESOURCE?

A. Yes. Based on year-end 2012 forecasts of energy prices by three independent consulting firms that we rely on for market information, looking forward, the energy price under the contract is comparable to expected market prices. To demonstrate this forecast view, in Chart 1 below, we show the cost of PRW is approximately equal to independent forecasts of off-peak energy prices in the MISO market. We primarily compare wind energy resources to off–peak

periods because historic data shows that wind energy is predominately produced off-peak. However, some generation does occur during peak periods, and will displace some of the higher priced on-peak energy.

Chart 1

[BEGIN TRADE SECRET

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Q. DID THE COMPANY CONSIDER PURCHASING ANY RESOURCES FROM PROJECTS IN NORTH DAKOTA?

A. Yes. A number of entities with projects based in North Dakota submitted bids into the Company's 2010 RFP. Our analysis at the time showed that some of these proposals would be subject to difficult and costly transmission constraints (raising the total cost), while others did not have a realistic chance of being completed by the end of 2012 (to ensure the selected project would qualify for PTCs). Others were simply less economic than the PRW PPA.

III. FRAMEWORK FOR RATE RECOVERY

Q. HAS THE COMMISSION ESTABLISHED A FRAMEWORK FOR THE RECOVERY OF PURCHASED POWER COSTS FROM RENEWABLE ENERGY RESOURCES LIKE THE PRW PPA?

A. Yes. The Commission's rules (N.D. Admin. Code § 69-09-02-39) provide for "automatic adjustment clauses" to be included in utility tariffs that allow for increases or decreases in rates, without prior hearing, to recover increases or decreases in fuel and purchased energy costs incurred by an electric utility. These costs include the net costs of energy from a renewable energy source, including hydropower, wood, wind power, and biomass.

Q. DOES THE COMPANY HAVE AN AUTOMATIC ADJUSTMENT CLAUSE IN ITS ELECTRIC TARIFFS?

A. Yes. Pursuant to its automatic adjustment clause rules, the Commission has approved the Company's Fuel Cost Rider (FCR), which allows, among other things, for the Company to include the costs of its purchases of renewable energy in the FCR.

Q. DOES THE PRW PPA QUALIFY FOR COST RECOVERY THROUGH THE COMPANY'S COMMISSION-APPROVED FCR?

A. Yes. The PRW PPA is an energy resource that meets the requirements for recovery of both our Commission-approved FCR and the Commission's automatic adjustment rules. Therefore, it is reasonable for the Company to expect to recover the costs of the PRW PPA through the FCR.

Q. HOW DOES THE FCR MECHANISM OPERATE?

A. Each month the Company calculates the total actual costs of fuel and purchased power on a system-wide basis for the most recent four month historical period. This amount is then divided by the total amount of system-wide retail sales for the same four month period to determine the average per kWh cost. This historical per kWh cost of fuel and purchased energy is combined with an ongoing FCR true-up factor to derive the monthly FCR rate.

Q. IS THE COMPANY CURRENTLY INCLUDING THE PRW PPA IN THE FCR RATE?

A. No. As described in the Company's March FCR filing, the Company has excluded both the costs and volumes of the energy purchased under the PRW PPA from our calculation of the monthly FCR rate.

Q. HOW WOULD THE PRW PPA NORMALLY IMPACT THE FCR?

A. As the project generates power, PRW PPA costs will primarily reduce fuel and purchased energy costs of natural gas generation and purchases from the MISO energy market. In Table 1 below, I provide the following example of the calculation, which is based on computer simulations of system dispatch and the resulting costs and energy over the first four months of 2013. The costs incurred during the months of January through April will be fully reflected in our June FCR rate (April costs are not finalized in time for inclusion in the May FCR filing). We note that since our June 2013 FCR filing will be based on *actual* fuel and purchased energy costs and system sales data, it will likely differ from this example.

Table 1: Example of PRW Impact on ND FCR

	Without Prairie Rose	With Prairie Rose	Change	
Fuel and Purchased Power Costs				
Account 151- Fossil Fuel	$144,102,695	$141,257,738	($2,844,957)	- 2.0%
Account 518 - Nuclear Fuel	$38,635,298	$38,635,298	$0	
Account 555 - Purchased Power	$137,024,579	$137,024,579	$0	
Account 555 - Prairie Rose PPA	$0	$7,757,856	$7,757,856	
Account 555 - MISO Day 2 Charges	$57,618,557	$54,773,600	($2,844,957)	- 4.9%
Account 555 - MISO Day 2 - Schedule 24	($384,141)	($384,141)	$0	
Account 555 - MISO - ASM Charges	$4,228,274	$4,228,274	$0	
Total System Costs	$381,225,261	$383,293,205	$2,067,944	+ 0.5%
Less Fuel Cost of InterSystem Sales	($14,688,843)	($14,688,843)	$0	
Net System Costs	**$366,536,418**	**$368,604,363**	**$2,067,943**	+ 0.6%
System MWH Sales				
Total NSP System Retail	13,859,409 MWh	13,859,409 MWh	0 MWh	
Non-Gen Muni's / Load Pattern	183,380 MWh	183,380 MWh	0 MWh	
Total NSP System MWH Sales	**14,042,789 MWh**	**14,042,789 MWh**	**0 MWh**	
Average Unit Cost of Fuel and Purchased Power				
Fuel Cost per KWh for NSP System	**$26.10**	**$26.25**	**$0.15**	+ 0.6%
North Dakota Proportion				
North Dakota MWh Sales	165,199 MWh	165,199 MWh	0 MWh	
Monthly Fuel Cost Recovery	**$4,311,925**	**$4,336,252**	**$24,327**	+ 0.6%

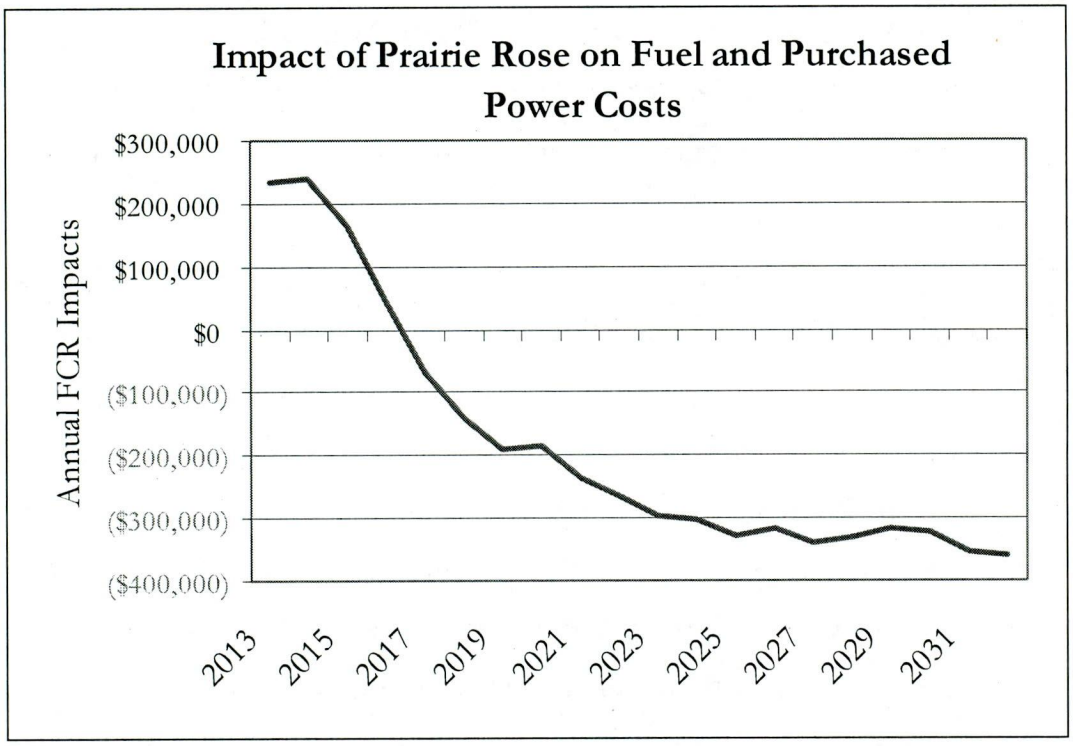
* ND FCR calculation is based on the total costs over the preceding 4 months. This example is for the May FCR calculation that would include the first 4 months of generation from Prairie Rose Jan-April

Q. WHAT EFFECT DOES THE PRW PPA HAVE ON THE FCR?

A. As illustrated in Table 1 above, comparing the PRW PPA to market price forecasts, the contract is expected to slightly increase (about 0.6 percent) overall fuel and purchased energy costs in the near-term. However, we expect this to reverse in future years, and ultimately result in a net decrease in overall costs over the course of the contract.

Chart 2 below illustrates the forecasted annual impact to our total North Dakota cost of fuel portion of the FCR calculation.

Chart 2



Q. DOES THE FCR OR THE COMMISSION'S AUTOMATIC ADJUSTMENT CLAUSE RULES PROVIDE FOR ANY COMMISSION REVIEW OF THE RECOVERY OF COSTS?

A. Yes. Both the FCR and the Commission's automatic adjustment clause rules provide for the Commission to fully review the costs incorporated in the FCR. Upon review, the Commission may prospectively adjust the ratemaking treatment of such costs.

Q. HAS THE COMMISSION EXERCISED ITS AUTHORITY TO REVIEW THE PRW PPA?

A. Although the Company's Commission-approved FCR would allow for the recovery of the costs of the PRW PPA without a formal proceeding, the Company filed an application in January 2012 for an ADP for the PRW PPA (Case No. PU-12-59). We made this filing consistent with our commitments in the settlement of Case

No. PU-07-776, as the PPA was for energy purchased from a generating resource of at least 50 MW. In its December 21, 2012 Order in the Case No. PU-12-59, the Commission dismissed our application for an ADP as untimely and ordered further proceedings to determine the ratemaking treatment for the PRW PPA.

Q. UNDER WHAT STANDARD MAY THE COMMISSION DETERMINE THE RATEMAKING TREATMENT FOR THE PRW PPA?

A. Although I am not an attorney, I have been advised that the Commission generally determines ratemaking treatment for generation investments under the broad-based "prudent investment rule," under which a utility is compensated for all prudent investments at their cost when made, regardless of whether they remain necessary in hindsight.[1] This is consistent with the "honestly and prudently invested" standard by which the Commission must value utility property.[2] When assessing the prudence of a particular utility investment or resource addition, the Commission considers whether a utility's actions were reasonable at the time the investment was made.[3] My testimony demonstrates the PRW PPA meets these tests, and thus the costs should be recovered through the Company's FCR.

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[1] *See* 73B C.J.S. Public Utilities § 44 (2012).

[2] N.D.C.C. § 49-06-02.

[3] *See, e.g., Montana Dakota Utilities Co. Electric Rate Increase Application*, ORDER ON SETTLEMENT, Case No. PU-10-124 (N.D. P.S.C. June 8, 2011) (adopting settlement where analysis of the reasonableness and prudence of a two wind resources was performed based on information known at the time the decision to invest in the wind resources was made and not some other future time even though resources were used and useful when the rate case was filed).

IV. THE PRW PPA IS PART OF THE INTEGRATED NSP SYSTEM

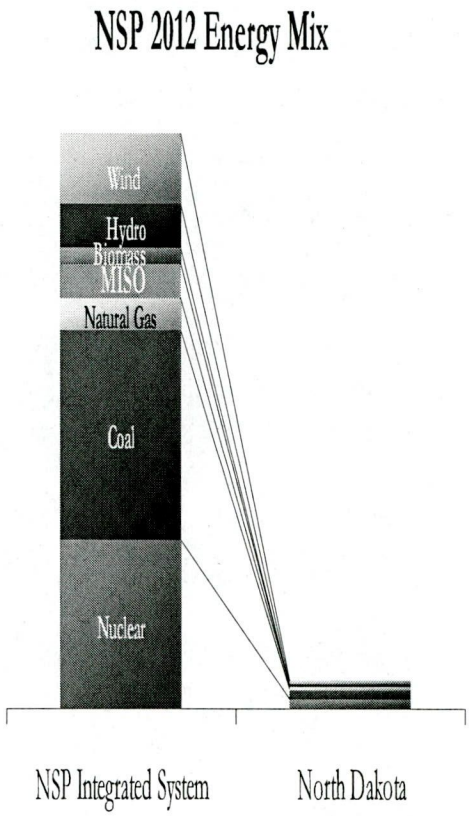
Q. PLEASE EXPLAIN THE CONCEPT OF THE INTEGRATED NSP SYSTEM AND HOW IT BENEFITS NORTH DAKOTA CUSTOMERS.

A. The planning and operation of the NSP System generation fleet and transmission system is done an integrated basis. This means that all generation resources and resource additions are, by default, available to all of our customers across the five-state NSP System. By doing so we have been successful in creating a diversified and low cost system that provides greater benefit than what could have been achieved serving any single jurisdiction as a stand-alone system.

Operating as a large integrated system allows the Company to provide all of our customers with significant generation flexibility at an overall lower cost. North Dakota customers effectively receive a 200 MW share of the 4,000 MWs of coal and nuclear baseload fossil resources serving the NSP System, as well as our recent addition of over 1,000 MW of intermediate combined cycle (CC) units that efficiently use natural gas to dynamically meet changes in customer demand.

Chart 3 below demonstrates the NSP System and corresponding North Dakota share (approximately 5 percent of the total 10,000 MW portfolio) of generation resources that serves the approximately 500 MW peak demand in North Dakota. A stand-alone utility with a 500 MW peak demand could not achieve this same level of resource diversity.

Chart 3



Without an integrated system, it would have been necessary for the Company to construct and operate separate resource portfolios for each individual state/jurisdiction. The cost to do this would have been significantly higher and the portfolios would have been less diverse and therefore providing lower levels of benefits to customers. This is because the integrated NSP System offers large economies of scale when constructing new resources and hence achieves a lower average cost per unit of power. A utility with 500 MWs of total load could not achieve these economies of scale or costs.

Q. IS THE ENERGY PURCHASED UNDER THE PRW PPA PART OF THE INTEGRATED NSP SYSTEM?

A. Yes. The integrated NSP System includes all Company-owned generation resources and all purchases of energy and capacity, such as purchases made under PPAs and from the MISO wholesale market. This means that the PRW PPA is an energy resource that serves customers in all NSP System jurisdictions.

Q. DOES THE PRW PPA REPRESENT AN IMPORTANT COMPONENT OF THE INTEGRATED NSP SYSTEM?

A. Yes. PRW complements the Company's diverse resource mix, and is a cost-effective, fixed-price hedge against future price volatility.

Q. PLEASE DISCUSS SOME OF THE BENEFITS THAT THE COMPANY REALIZES FROM THE PRW PPA.

A. We believe that the price of energy offered in the PRW contract is very competitive with other sources of energy, and that the fixed priced aspect of the contract will contribute to stabilizing customer rates during the twenty-year term of the contract. While there may be some incremental costs in the near-term, as I have demonstrated, we believe the benefits to customers over the life of the PPA outweigh these costs.

Q. PLEASE ELABORATE ON THE BENEFITS OF FIXED PRICE CONTRACTS.

A. Fixed price contracts provide a hedge against future price uncertainty by locking in a price that will not increase unexpectedly in the future. Fixed price contracts additionally benefit our customers by lowering our reliance on variable-priced energy sources such as natural gas or daily energy markets.

Through diversification, the NSP System has already successfully hedged against the risk of price volatility from any one particular fuel source. We have significant coal, nuclear, hydro, natural gas, and wind resources, supplemented by other resources (biomass, etc.). By reducing our reliance on any one fuel type and appropriately balancing fixed price resources, we are able to provide customers with more stable rates at an overall reasonable cost.

Q. BUT AREN'T NATURAL GAS PRICES VERY LOW NOW? WILL THE 20-YEAR PRW PPA PRECLUDE CUSTOMERS FROM BENEFITING FROM THOSE LOW PRICES?

A. Natural gas prices are low right now, and the Company has natural gas resources as part of its resource mix, so customers are realizing those benefits. However, natural gas prices have historically been quite volatile, and they could rise again in the future. For example, from 2003 to 2009, the price of natural gas fluctuated significantly while the Company's overall fuel costs were relatively stable because of the coal, nuclear and hydro components of our diverse portfolio.

Chart 4 below demonstrates the historic volatility of natural gas prices and market energy and compares these to the fixed price PRW contract over its 20-year term. We believe the long-term PRW PPA purchase represents a cost-effective and prudent step to managing these risks.

Chart 4

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A cost-effective fixed price contract like PRW helps to mitigate the risk of this kind of "up and down" effect on customers' energy bills over the long-term. We believe customers value such stability when it is cost-effective – and the PRW PPA is an excellent example of the Company providing our customers with long-term stability with a diverse and cost-effective energy resource.

Q. WHAT DO YOU EXPECT NATURAL GAS PRICES TO DO OVER THE 20-YEAR TERM OF THE PRW PPA?

A. Going forward, natural gas price volatility could continue. For example, forward natural gas prices over the next year are up more than nine percent from those forecasted in January 2013 – only three months ago. Based on our

dispatch simulations, 75 percent of the energy produced by PRW will replace either MISO market purchases or natural gas consumption at one of the NSP System plants. This would result in switching approximately 1.5 percent of our overall energy portfolio from the fluctuating prices of natural gas and MISO market energy to a twenty-year fixed price contract.

Q. ARE THERE ANY OTHER BENEFITS OF THE PRW CONTRACT?

A. Yes. Because this is a wind energy contract, there is less risk of additional costs stemming from the unknown environmental compliance associated with fossil fuel alternatives. By acting now, we reduce our customers' cost exposure to these environmental regulations. For example, if new regulations governing hydraulic fracturing are implemented, there may be a significant rise in the price of natural gas. The low-cost, fixed price renewable energy from the PRW PPA helps to mitigate this regulatory risk.

As I previously noted, the PRW PPA will also produce RECs that can be sold to create cost-offsetting proceeds for NSP System customers, which includes our customers in North Dakota. These credits further improve the economics of the contract.

Q. GIVEN ALL THESE FACTORS, WAS THE SELECTION OF THE PRW PPA AN APPROPRIATE AND PRUDENT DECISION?

A. Yes. The Company conducted a rigorous RFP process to potentially take advantage of historically low wind prices and the PTC, which was expected to expire at the end of 2012. We identified and contracted for a cost-effective, fixed price resource on a long-term basis that will provide customers REC benefits, and that mitigates future natural gas price volatility and risk of future

environmental compliance costs associated with fossil fuel resources. Over its 20-year term, the PRW PPA will provide benefits to our North Dakota customers both in terms of stable cost-effective energy prices and REC revenues.

V. EFFECT OF EXCLUDING THE PRW PPA FROM RATES

Q. WHAT IS THE EFFECT OF EXCLUDING THE PRW PPA COSTS AND VOLUMES FROM THE FCR RATE?

A. As I described previously, the Company has excluded both the costs and volumes of the energy purchased under the PRW PPA from our calculation of the monthly FCR rate during the pendency of this proceeding. Exclusion of the PRW PPA costs and volumes from our FCR calculations results in the FCR no longer reflecting the Company's actual per kWh cost of fuel and energy purchases. By not reflecting the actual per kWh cost, the Company is not currently recovering its purchased power costs from North Dakota customers.

Q. DOES THE COMPANY SEEK TO RECOVER THIS INTERIM PERIOD SHORTFALL?

A. Yes. The Company proposes to recover any shortfall that exists in its recovery of PRW PPA costs, based on the final ratemaking treatment ordered by the Commission. Assuming the Commission allows FCR recovery, the shortfall could be recovered as part of any interim rate refund calculation in this case, for example.

Q. WHY IS IT IMPORTANT THAT THE FCR ACCURATELY REFLECT THE SYSTEM AVERAGE COST OF FUEL?

A. The Commission's automatic adjustment clause rules prescribe specific formulas for the determination of per kWh costs, and ultimately the recovery of system fuel costs and power purchases. Our FCR tariff similarly includes specific formulas and costs to be included. If the FCR is modified in a way that does not provide for an accurate calculation of all fuel and purchased energy costs, then the Company will likely either over- or under-recover those costs from customers.

Q. MAY THE COMMISSION DISALLOW RECOVERY OF THE PRW PPA COSTS?

A. The Commission's automatic adjustment clause rules and our FCR Tariff both allow for Commission review of fuel and purchased energy costs. However, the decision as to whether to allow recovery or not should follow sound regulatory principles such as the prudent investment rule, which assesses whether a utility's actions were reasonable at the time the investment was made.

Q. IF THE COMMISSION DETERMINES THAT PRW PPA COSTS ARE NOT RECOVERABLE, WOULD NORTH DAKOTA RATEPAYERS STILL BE RECEIVING ENERGY FROM THE PROJECT?

A. Yes. As I have described, the Company plans and operates its energy resource and transmission portfolio as an integrated NSP System. The PRW PPA is part of the energy portfolio of this integrated system. Consequently, when MISO dispatches PRW energy in lieu of other resources, the Company purchases the PRW energy and utilizes it on a load share basis throughout the five jurisdictions served by the NSP System – including North Dakota. Therefore, the associated PRW PPA costs should also be shared among the five states on a load share basis.

If the Commission were to determine that the costs of the PRW PPA were not recoverable through the FCR (or some other rate mechanism), our North Dakota customers would be receiving energy from PRW without paying the actual costs that the Company incurs for the energy.

Q. WHAT OPTIONS DOES THE COMMISSION HAVE TO ENSURE CUSTOMERS PAY FOR THE ENERGY THEY RECEIVE?

A. If the Commission determines it will not allow standard FCR recovery of PRW PPA costs, the costs of some type of replacement energy would need to be reflected in the calculation of the FCR. If no replacement energy costs were included in the FCR, North Dakota customers would essentially be consuming some of the integrated system's energy at no cost. In this case, the FCR calculation would not reflect the actual per kWh cost of fuel and purchased energy as required by the Commission's rules.

Q. HOW SHOULD THE REPLACEMENT ENERGY COSTS BE CALCULATED?

A. The Company's decision to enter into the PRW PPA was prudent. However, if the Commission were to determine that the costs of the PRW PPA can not be recovered through the FCR, the Company proposes that a replacement energy cost methodology be adopted to ensure that North Dakota customers pay for the energy they receive. We propose that the replacement energy cost be based on the energy costs our North Dakota customers would have incurred if PRW was not dispatched as part of the integrated NSP System.

Q. WHAT DO YOU RECOMMEND AS THE APPROPRIATE MEASURE OF REPLACEMENT ENERGY COSTS?

A. I am not aware of a precedent for calculating replacement energy costs. However, I would recommend the use of hourly Locational Marginal Prices (LMP) as determined by MISO.

Q. WHY DO YOU PROPOSE THE USE OF MISO LMP TO DETERMINE THE REPLACEMENT COST OF ENERGY?

A. When a wind farm generates energy, it displaces marginal (or incremental) energy. LMPs reasonably represent the cost of the next increment of energy at a particular location. Therefore, LMP would be a reasonable proxy for what it would cost to replace the energy from PRW if that resource was removed from the integrated NSP System's dispatch stack.

In daily operations, the Company is often purchasing energy from the MISO market at the LMP price in order to displace operation of its marginal units. In other words, using LMPs to determine the replacement energy costs provides a real-world proxy for what the Company's per kWh cost of fuel would have been without the PRW PPA.

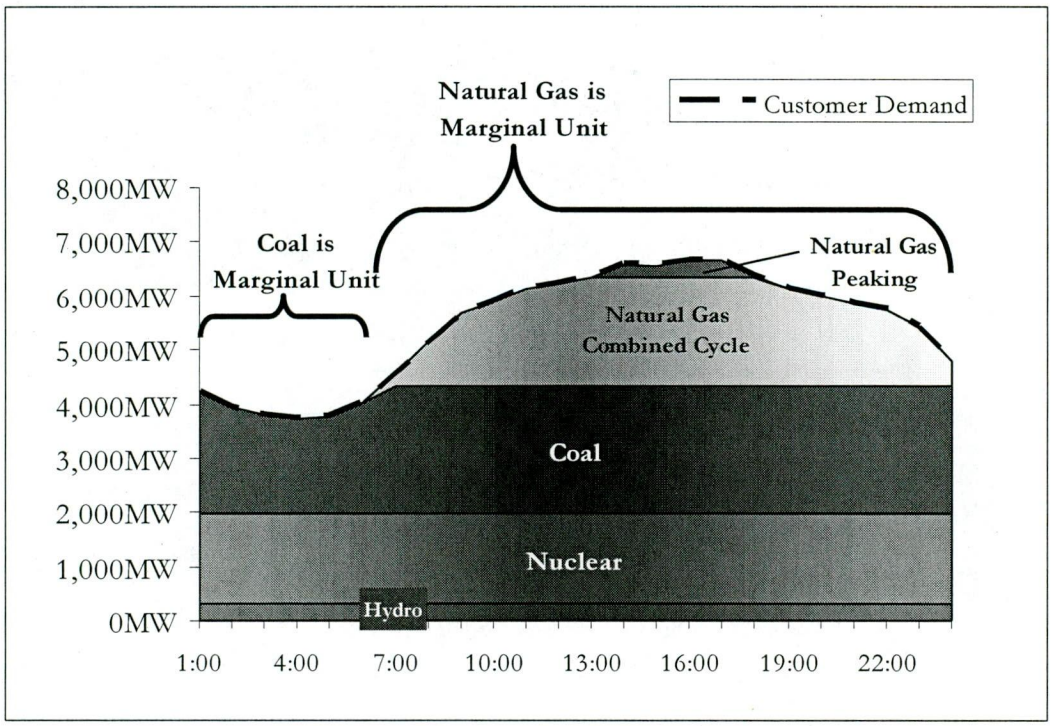
Q. CAN YOU PROVIDE AN EXAMPLE OF HOW THE MISO LMP PRICE REFLECTS THE PROXY COST OF DISPLACING PRW ENERGY COSTS?

A. Yes. First let me explain what I mean by wind displacing marginal energy. The electric power system must balance the energy demand from customers perfectly with the power supply from our generators. To serve customer demand at the lowest possible cost, we dispatch baseload units with the lowest per-unit fuel cost first, followed by higher-priced units as customer demand

increases. The last unit dispatched is commonly referred to as the 'marginal unit.'

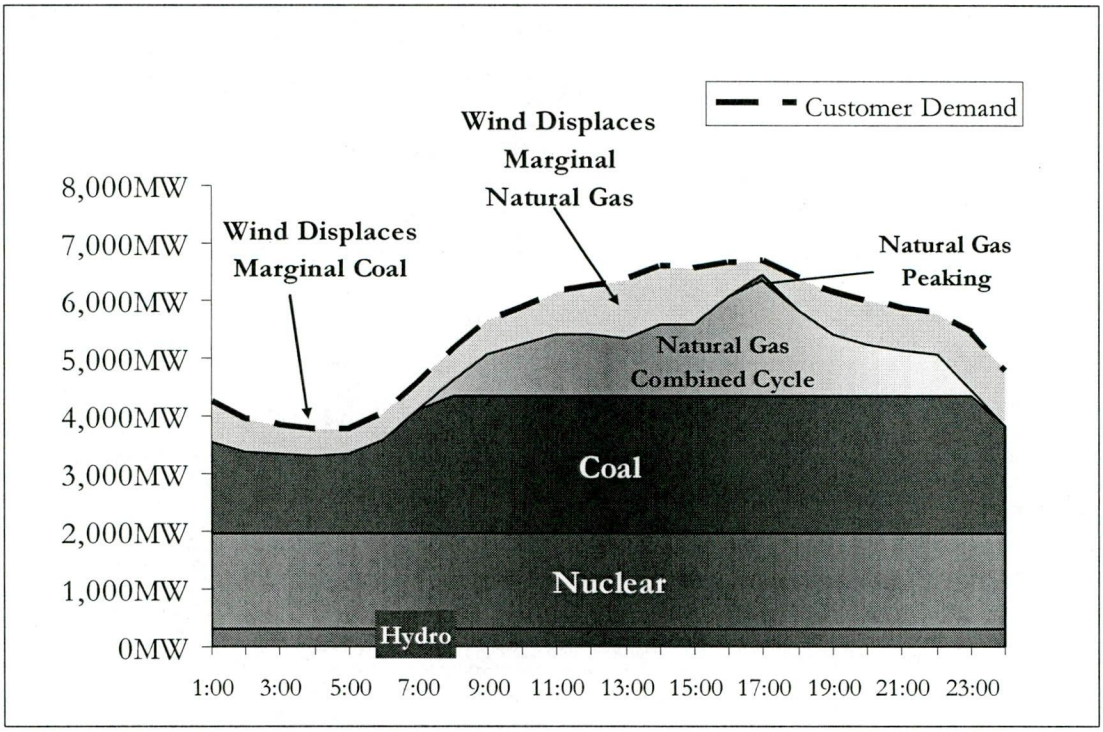
On the integrated NSP System, the units with the lowest fuel costs are the 300 MW of hydro electric dams in Wisconsin. Next are our nuclear and coal units, which both have extremely low fuel costs. After the baseload units are at maximum capacity, we dispatch our most efficient natural gas units, followed by other, less-efficient natural gas units. These natural gas units are most frequently the marginal units on our system. Chart 5 below illustrates customer demand on a typical summer day and the units that are dispatched to meet load.

Chart 5



When a wind farm is generating power, some other resource must be reduced to maintain a balance between supply and demand. It is most economical to reduce generation from the highest-priced (i.e. marginal) unit. Chart 6 below illustrates how wind displaces the marginal energy unit on a typical summer day.

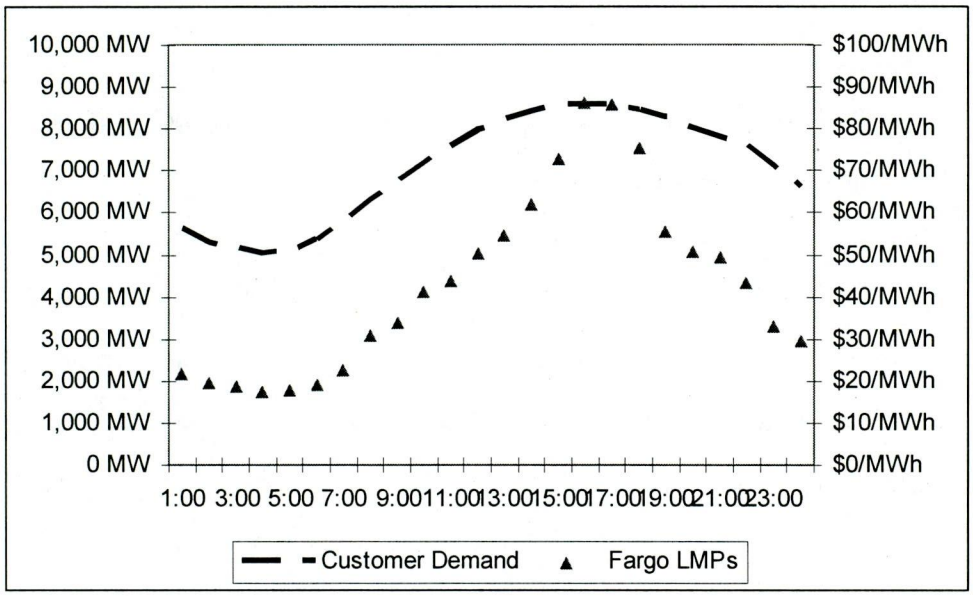
Chart 6



The price of marginal generation resources can be estimated by computer simulation, but since the inception of the MISO market, it is much easier to reference their published LMPs. The NSP System ends-up serving approximately 90 percent of our customer loads with NSP System resources. However, the MISO process results in MISO publishing marginal generation cost estimates for hundreds of locations throughout the Midwest – including Fargo, North Dakota. These LMPs reflect the cost to run the marginal

generation resource plus the cost to deliver that energy to a specific location. Chart 7 below illustrates how the marginal cost of energy in Fargo follows the general pattern of customer demand.

Chart 7



Q. WHAT ARE SOME OF THE ADVANTAGES OF USING MISO LMPS AS THE PROXY?

A. As I discussed previously, using LMPs would be a reasonable proxy for what it would cost to replace the energy from PRW if that resource was removed from the integrated NSP System's dispatch stack. In addition, an advantage of using LMP prices is transparency. LMP prices are public information that is published by MISO, so is readily available, and easily tracked and verified.

The other alternative would be to do a retrospective dispatch simulation without the generation from PRW. Theoretically, this should result in the same marginal costs represented by the LMPs, but with considerable computer modeling by the Company. We would expect that the Commission

would want to have oversight over the calculations, so this alternative would likely also require a significant time commitment by Commission staff to verify the calculations.

Q. IF THE COMMISSION DETERMINES THE COMPANY MUST USE A REPLACEMENT ENERGY COST, WHAT DO YOU RECOMMEND?

A. Fundamentally, I believe the PRW PPA was a prudent decision that will provide NSP System customers long-term value, and should be recovered through the FCR. If the Commission determines otherwise, to ensure that North Dakota customers pay for the energy they receive from the NSP System, I recommend we use MISO LMPs. This would allow the use of an LMP close to our load center in Fargo that would represent the actual cost of energy in that area which may differ from the average prices in MISO. Importantly, using LMPs allows for the replacement energy costs to be based on a real-world proxy and not an arbitrary amount.

Q. HOW DO LMP PRICES COMPARE TO THE COSTS OF THE PRW PPA?

A. It is unknowable what LMP values will be throughout the 20-year term of the PRW PPA. Current forecasts indicate that the costs of the PRW PPA allocated to our North Dakota customers may be slightly higher than LMP prices in the initial four to five years of the PPA, but lower over the remaining 14-15 years of the 20-year term. We believe that, in the long-term, the economics of the PRW PPA compares favorably to the market, and the certainty of the fixed price provides significant advantages and a hedge against the possibility of higher market prices.

Q. CAN YOU PROVIDE AN EXAMPLE OF HOW THE FCR WOULD BE CALCULATED USING LMPS AS THE REPLACEMENT COST ENERGY?

A. Yes. Table 2 below shows how the cost of PRW energy could be removed and replaced with the MISO LMP costs at Fargo from the preceding four months. This example uses the same total incremental cost that was estimated and shown in the previous FCR example.

Table 2: Example of PRW Energy Replacement MISO LMP Costs

With Prairie Rose	
Fuel and Purchased Power Costs	
Account 151- Fossi Fuel	$141,257,738
Account 518 - Nuclear Fuel	$38,635,298
Account 555 - Purchased Power	$137,024,579
Account 555 - Prairie Rose PPA	$7,757,856
Account 555 - MISO Day 2 Charges	$54,773,600
Account 555 - MISO Day 2 - Schedule 24	($384,141)
Account 555 - MISO - ASM Chrages	$4 228 274
Total System Costs	$383,293,205
Less Fuel Cost of InterSystem Sales	($14 688 843)
Net System Costs	**$368,604,363**
System MWH Sales	
Total NSP System Retail	13,859,409 MWh
Non-Gen Muni's / Load Pattern	183 380 MWh
Total NSP System MWH Sales	**14,042,789 MWh**
Average Unit Cost of Fuel and Purchased Power	
Fuel Cost per KWh for NSP System	**$26.25**
North Dakota Proportion	
North Dakota MWh Sales	165,199 MWh
Monthly Fuel Cost Recovery	**$4,336,252**

With Replacement Energy Costs	
Fuel and Purchased Power Costs	
Account 151- Fossi Fuel	$141,257,738
Account 518 - Nuclear Fuel	$38,635,298
Account 555 - Purchased Power	$137,024,579
REPLACEMENT ENERGY	$5,689,913
Account 555 - MISO Day 2 Charges	$54,773,600
Account 555 - MISO Day 2 - Schedule 24	($384,141)
Account 555 - MISO - ASM Chrages	$4 228 274
Total System Costs	$381,225,261
Less Fuel Cost of InterSystem Sales	($14 688 843)
Net System Costs	**$366,536,418**
System MWH Sales	
Total NSP System Retail	13,859,409 MWh
Non-Gen Muni's / Load Pattern	183 380 MWh
Total NSP System MWH Sales	**14,042,789 MWh**
Average Unit Cost of Fuel and Purchased Power	
Fuel Cost per KWh for NSP System	**$26.10**
North Dakota Proportion	
North Dakota MWh Sales	165,199 MWh
Monthly Fuel Cost Recovery	**$4,311,925**

In this example, using replacement LMP costs results in a somewhat lower cost to our North Dakota customers. However, in periods where the LMP price is higher than the PRW PPA price, use of replacement energy costs would result in a higher cost to customers.

VI. CONCLUSION

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. The Company obtained the PRW PPA through a fair, competitive, and rigorous RFP process. It will provide a hedge against price volatility and otherwise benefit our North Dakota and other NSP System customers over its 20-year term. The Company's decision to enter into the PRW PPA was prudent and therefore should be recovered through the Company's FCR.

In the event the Commission disallows the recovery of the PRW PPA costs, an appropriate replacement energy cost must be identified. MISO LMPs represent the most transparent and accurate method to determine a cost for replacement energy for our North Dakota loads, and has the advantage of being publicly-available and transparent.

Q. DOES THIS CONCLUDE YOUR SUPPLEMENTAL DIRECT TESTIMONY?

A. Yes, it does.

Steven W. Wishart Jr.

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Golden CO, 80401

EXPERIENCE

Xcel Energy, Minneapolis MN, Denver CO — 5/12-Current
Director – Resource Planning & Bidding

Xcel Energy, Minneapolis MN, Denver CO — 4/06-05/12
Manager / Sr. Analyst / Analyst – Strategic Analytics

Responsibilities:

- Oversee economic evaluation of large power supply projects for Xcel Energy.
- Prepare analysis for senior leadership that reports on expected value and value at risk for new generation assets, power purchases, conservation programs, wholesale sales, and other projects.
- Maintain complex model of the three Xcel Energy power systems for use in, project evaluation, rate forecasting, and policy analysis.
- Manage a group of quantitative analysts that evaluate various supply and demand side alternatives for all three Xcel Energy service territories.
- Serve as quantitative expert for resource planning and purchased power related dockets.

Major Projects:

- Colorado Clean Air Clean Jobs Act – Retire/repower 900MW of existing coal units in PSCo service territory for compliance with regional NOx legislation.
- 2010 Minnesota Resource Plan – 10 year projection of new resource acquisitions, retirements, renewable energy standard compliance, and enhanced conservation programs.
- Jones Station Repowering – Convert existing 240MW gas steam unit to 650MW combined cycle in SPS service territory.
- 2009 PSCo All-Source Solicitation – Modeling/evaluation of bids totaling 20,000MW. Including Gas, wind, solar PV, solar thermal with storage, compressed air storage, pumped hydro, wind/battery combo, and solar augmented combined cycle.
- Manitoba Hydro CON – Economic valuation of 10yr $1.6B purchase from MH.
- Nuclear Uprate Projects – Economic evaluation and expert witness for Prairie Island and Monticello nuclear uprate proceeding in NSP service territory.
- CO2 Regulation - Forecasted rate impacts of American Clean Energy and Security Act (ACES) on the Xcel Energy operating companies.
- Other - Bottom up redesign of Xcel's long-range planning models, focusing on consistency across jurisdictional operating companies and integration of best practices including Monte-Carlo simulation for risk evaluation. Represented Xcel Energy at MISO board of directors/stakeholder meetings on the topic of wind integration. Long range rate forecasts for management and stakeholders. Financial and economic analysis for Excelsior IGCC project. Analysis of long term power purchase from Manitoba Hydro. EEI regulatory accounting seminar.

Software:

- Strategist, Matlab, Prosym, Excel, Access.

Xcel Energy, Minneapolis MN
Demand Side Management (DSM) Technical Analyst — 2/05-4/06

Responsibilities:

- Managed cost/benefit analysis of NSP's $45 million annual conservation and load management activities, including forecasting of financial incentives, and strategic planning.

Projects:

- Evaluation and contract negotiations of DSM bids in Colorado service territory.
- Conservation rulemaking in New Mexico, including design of financial incentive mechanism.
- Cost benefit analysis of NSP's three-year conservation and load management strategic plan.

Software:

- Strategist, DSManager, Matlab, Excel.

The Solar Store, Tucson AZ 10/98-8/00
Accountant

- AR/AP, payroll, inventory management, sales, solar energy system design & installation.
- Member of Concerned Arizonans for Renewable Energy (CARE) lobbied in support of solar tax credits in Arizona.

EDUCATION

PhD (all but dissertation) **Applied Economics, University of Minnesota, 3.7GPA** 8/02-1/05

Course Work:

- Emphasis - environmental and natural resource economics. Other course work - Financial economics, econometrics, dynamic programming, production economics, non-parametric frontier analysis, managerial economics, international trade, macro- and microeconomics.

Software:

- SAS, Matlab, Gauss, Stata, Mathematica.

MS Economics, University of Arizona, 3.8GPA 8/00-5/02

Course Work:

- Environmental economics, environmental law, econometrics, linear and quadratic programming, production economics, consumer economics.

Software:

- SAS, Stata, LimDep, Gams, Lindo, Gauss.

BS Finance, University of Arizona 8/92-12/96

Course Work:

- Financial markets and instruments, corporate finance, accounting, statistics, economics, marketing, Russian, French.

STATE OF NORTH DAKOTA
BEFORE THE
PUBLIC SERVICE COMMISSION

NORTHERN STATES POWER COMPANY
2013 ELECTRIC RATE INCREASE
APPLICATION

CASE NO. PU-12-813

VERIFICATION

STATE OF MINNESOTA)
) ss.
COUNTY OF HENNEPIN)

Steven W. Wishart, being first duly sworn on oath, deposes and says that he is the Director of Resource Planning for Xcel Energy Services Inc. on behalf of Applicant Northern States Power Company in the above captioned matter, that he has read the Supplemental Direct Testimony of Mr. Steven W. Wishart, knows the contents thereof, and that the same is true and correct to the best of his knowledge and belief.

Steven W. Wishart

Subscribed and sworn to before me this 2ND day of April, 2013.

Notary Public
My Commission Expires: 1-31-15

CYNTHIA D. HARRINGTON
NOTARY PUBLIC
MINNESOTA
My Commission Expires Jan. 31, 2015