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Direct Testimony and Schedules
Patrick J. Panzarino

State of Minnesota
Before the Office of Administrative Hearings
For the Minnesota Public Utilities Commission

In the Matter of a Petition by Excelsior Energy Inc. for Approval of a Power Purchase Agreement Under Minn. Stat. § 216B.1694, Determination of Least Cost Technology, and Establishment of a Clean Energy Technology Minimum Under Minn. Stat. § 216B.1693

OAH Docket No. 12-2500-17260-2
PUC Docket No. E6472/M-05-1993

Fuel Supply

September 5, 2006

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I. INTRODUCTION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME.

A. My name is Patrick J. Panzarino.

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

A. I am the Director of Coal Supply and Combustion By-products Management for Xcel Energy Services Inc.

Q. FOR WHOM ARE YOU TESTIFYING?

A. I am providing testimony on behalf of Northern States Power Company doing business as Xcel Energy ("Xcel Energy" or the "Company").

Q. PLEASE SUMMARIZE YOUR QUALIFICATIONS AND EXPERIENCE.

A. I received a Bachelor of Engineering in Metallurgy and Materials Science from New York University and have completed study towards a Masters degree in Technology at the Daniels Graduate School of Business. As Director of Coal Supply, I am responsible for developing and implementing the procurement plan for the purchase of coal and transportation services, annually amounting to approximately $1.0 billion and 34 million tons of sub-bituminous and bituminous coal. My resume is provided as Exhibit___(PJP-1), Schedule 1.

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

A. I evaluate MEP-I LLC's ("Mesaba 1 LLC") proposed fuel supply plan to determine whether it is capable of offering a long-term supply contract at a hedged, predictable cost. I also assess the reasonableness of Mesaba 1 LLC's fuel cost assumptions.

Q. WHAT IS THE RESULT OF YOUR ASSESSMENT?

A. I conclude that Mesaba 1 LLC's proposal will not provide a hedged, predictable cost because it does not plan to enter into long-term agreements to manage volatility in fuel acquisition and delivery costs; instead it plans to manage volatility through fuel switching. Fuel switching will not provide a meaningful hedge on fuel costs. **[TRADE SECRET BEGINS**

TRADE SECRET ENDS]. I also conclude that if Mesaba 1 LLC does enter into long-term supply contracts, its ability to burn a variety of fuels will be cost prohibitive due to inherent logistical issues. Finally, the fuel costs used by Mesaba 1 LLC in its fuel cost projections are significantly lower than current projections.

II. FUEL SUPPLY PLAN

Q. PLEASE DESCRIBE MESABA 1 LLC'S FUEL SUPPLY PLAN.

A. Mesaba 1 LLC proposes to use a fuel-flexible (fuel-switching) strategy that considers the input fuels and associated delivery options that can be employed by the Integrated Gasification Combined Cycle technology proposed for Mesaba Unit 1. Mesaba 1 LLC expects to minimize power costs by entering into five-year or shorter duration fuel supply contracts. It believes that such terms would allow Mesaba Unit 1 to take advantage of price spreads between Powder River Basin coals, petroleum coke, and future, potentially lower-priced Illinois coal.

Q. WHAT IS YOUR ASSESSMENT OF THIS PLAN?

A. I believe this plan is flawed, and would provide neither a hedge on fuel prices nor long-term cost advantages. Based on my experience, long-term purchase and transportation agreements will be required to obtain the best prices, manage volatility, and ensure reliable deliveries. Given the infrastructure required for delivery of solid fuels, coupled with the current and expected continued constraints in delivery capacity and volatile fuel prices, Mesaba 1 LLC's plan would result in **[TRADE SECRET BEGINS TRADE SECRET ENDS]** significant price risk and volatility.

A. Delivery Issues

Q. WHAT ARE MESABA 1 LLC'S PLANS FOR DELIVERING FUEL TO MESABA UNIT 1?

A. Mesaba 1 LLC indicates that fuels will be delivered to the project via either rail from the Powder River Basin or a three-leg combination of rail from an Illinois mine, vessel across the Great Lakes, and rail to Mesaba Unit 1.

Q. WHAT IS YOUR ASSESSMENT OF THIS DELIVERY PLAN?

A. I see several issues with this plan that could affect the cost, availability, and volatility of delivery costs. For Powder River Basin supplies, the limited number of rail suppliers has led to price volatility and significant cost increases for that delivery option. Given this capacity shortage, it is unclear whether Mesaba 1 LLC's plan to obtain short-term rail services is even feasible; what is clear, however, is that the plan exposes Mesaba Unit 1 to significant fuel cost volatility. For the potential Illinois supply, the infrastructure required to implement the three-leg delivery plan is significant and not amenable to short-

term deliveries. Delivery providers generally require commitments from shippers to ensure recovery of the significant infrastructure investments required to provide transportation services. Mesaba 1 LLC's plan to use short-term contracts to supply eastern fuels appears infeasible and results in exposure [TRADE SECRET BEGINS

TRADE SECRET ENDS] to fuel cost volatility.

Q. CAN YOU PROVIDE MORE DETAIL REGARDING THE LIMITATIONS OF MESABA 1 LLC'S PLAN WITH RESPECT TO DELIVERIES OF POWDER RIVER BASIN COAL?

A Yes. The key limitations stem from the lack of competitive options for delivery of western coal and the shortage of capacity in the existing delivery systems.

Q. PLEASE DISCUSS THE COMPETITIVE SITUATION FOR DELIVERY OF WESTERN COAL.

A. There are only two Class One Western railroads for the delivery of Powder River Basin coal – Burlington Northern Santa Fe ("BNSF") and Union Pacific ("UP") – making options and competitive pricing limited. Given the availability of only two suppliers and high demand for Powder River Basin coal, the factors contributing to a competitive market (many available sellers and buyers and adequate capacity to provide the product) are generally not present in the western rail market. In addition, UP is currently operating under an embargo that affects its ability to take on new business. It is not certain when this embargo will be lifted or whether the UP would bid competitively to serve Mesaba Unit 1. It may be possible to use the Canadian Pacific Railroad ("CP") to access the UP; however, that delivery provider is also capacity-constrained and this approach would add another layer of costs.

This present situation leaves BNSF as the only option, possibly exposing Mesaba 1 LLC to onerous transportation costs and terms. In any event, there is no basis for concluding that its plan would offer a hedged, predictable price, given the uncertainty in the availability or price of delivery services.

Q. PLEASE DESCRIBE THE SHORTAGE IN DELIVERY CAPACITY FOR WESTERN COAL.

A. Presently, the western railroads are performing at an annualized rate of approximately 354 million tons per year. The forecast annualized demand for 2006 is believed to be approximately 373 million tons per year. This 373 million-ton demand is comprised of the approximate 15 – 20 million-ton shortfall in 2005 railroad deliveries, plus the original 2006 demand forecast of 350 million tons. The 15 – 20 million-ton shortfall in deliveries depleted inventory levels and in some cases resulted in generators meeting their load requirements with natural gas-fired generation.

Q. DO YOU EXPECT THIS CURRENT SITUATION TO PERSIST?

A. Both BNSF and UP are investing significant capital to expand the existing jointly owned, Joint-Line infrastructure for the delivery of Powder River Basin coal, so this situation may ease. Both railroads report that this expansion will enable them to handle approximately 400 million tons of Joint-Line coal shipments by 2009. However, comments from both railroads suggest that only cautious optimism is warranted. For example, as BNSF's Chief Executive Officer Matt Rose indicates in *Railway Age* (December 2004): "We don't bring capacity on sooner than we need it, so we always have a natural tightness." Likewise, UP's Vice President of Marketing, Jack Koraleski, indicated to the Associated Press in January 2005: "In some ways, we are

where we always wanted to be, with demand for our services outstripping the supply."

Q. WOULD THIS EXPANSION ADDRESS YOUR CONCERN ABOUT THE AVAILABILITY OF DELIVERY SERVICES FOR POWDER RIVER BASIN COAL?

A. No. While this expansion should bring some welcome relief to the current situation, due to newly constructed and other proposed coal generation facilities, demand for Powder River Basin coal is forecasted to require more than this transportation capability. The additional capacity of new coal-fired generating facilities under construction and scheduled to come on line during 2008 – 2011 is 6400 MWs, or approximately 28 million tons of coal. The capacity required for facilities under advanced development in 2008 – 2013 is approximately 7500 MWs, or approximately 33 million tons. An additional 16,300 MWs is in early stages of development for 2009 – 2012 completion, with another 24,000 MWs proposed for completion after 2012.

Q. LET'S TURN TO THE ISSUES ASSOCIATED WITH DELIVERY OF EASTERN ILLINOIS COAL. WHAT LIMITATIONS DO YOU SEE ASSOCIATED WITH MESABA 1 LLC'S PLAN FOR DELIVERIES FROM THE EAST?

A. The issues associated with this approach, like the western rail services, arise from dependence on a limited number of potential suppliers to provide the delivery services. Delivery from the east, however, is further complicated due to dependence on limited suppliers for each of the three legs of the shipment: dependence on limited capacity and rail providers from the coal mines in southern Illinois to the Great Lake ports, dependence on a consolidated Great Lakes vessel fleet, and dependence on limited capacity and rail providers for delivery to the plant site. In addition, storage of coal at both the shipping and

destination ports would also have to be arranged and would contribute to costs. Accordingly, given the necessary infrastructure coordination associated with delivering Illinois coal to the Mesaba Unit 1, it is doubtful that this approach would be commercially viable absent long-term contracts with the various suppliers.

Q. WHY WOULD A LONG-TERM AGREEMENT IMPROVE DELIVERABILITY AND REDUCE FUEL VOLITILITY GIVEN THESE CAPACITY AND COMPETITIVE CONSTRAINTS YOU IDENTIFY?

A. The western railroads advise that planning for the necessary capital and infrastructure to meet capacity additions requires a two- to four-year lead-time. Long-term agreements for the supply of coal will insulate the buyer from the price volatility of the short-term rail market. Frequently, long-term agreements will have modest, inflationary cost adjustments, as opposed to the larger price swings typical of spot or short-term agreements. Mesaba 1 LLC's strategy of shifting frequently between fuel source originations would **[TRADE SECRET BEGINS TRADE SECRET ENDS]** fuel cost volatility. In addition, because delivery accounts for approximately 60 percent or more of the delivered price of solid fuels and requires substantial logistical planning, the price difference in potential fuels for Mesaba Unit 1 may not be sufficient to make Mesaba 1 LLC's strategy cost-effective.

Q. BASED ON THIS INFORMATION, WHAT DO YOU CONCLUDE REGARDING MESABA 1 LLC'S PLANS FOR DELIVERING FUELS TO MESABA UNIT 1?

A. I conclude that Mesaba 1 LLC's plan would not provide a hedge to fuel costs and would likely lead to higher costs than could be obtained using a long-term contracting strategy. The plan exposes Mesaba Unit 1 to significant risk,

including risks of availability of fuel (as there is no assurance that delivery services would be available on a short-term basis) and price (as the lack of capacity in the delivery system indicates that prices will be volatile). Because delivery providers require long-term commitments to ensure the availability of transportation services, Mesaba 1 LLC will likely find that it is unable to fully use the fuel-switching capabilities of Mesaba Unit 1, as it will be necessary to commit to a fuel source and delivery services on a longer-term basis to obtain reliable service and predictable prices. It would be cost-prohibitive to secure long-term commitments for both eastern and western deliveries, thus indicating that Mesaba 1 LLC will likely be unable to implement its flexible-fuel plan in a cost-effective manner.

B. Fuel Prices

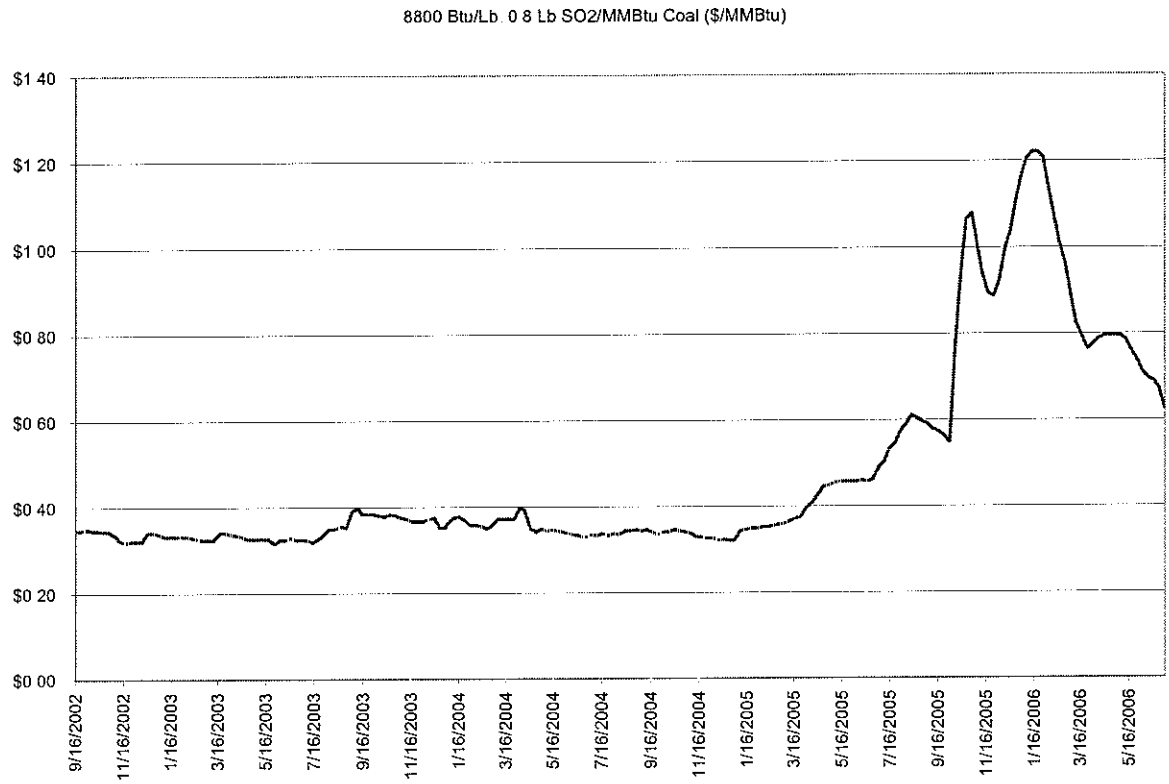
Q. IS THERE VOLATILITY IN COAL PRICES?

A. Yes. The market for coal has experienced increased volatility in the past two years. This volatility stems from the correlation between the price of coal and other fuel sources, such as natural gas and crude oil – that is, as the price of alternative fuels increase, the demand for and price of coal increases. Thus, coal prices have been volatile because the prices of natural gas and oil have been volatile. The consolidation of coal-producing companies and their transformation into publicly traded entities has also caused price increases as these entities have exercised greater pricing discipline. Finally, the entrance of financial institutions into both financially and physically traded coal markets have contributed to coal price volatility.

Q. GIVEN THIS VOLATILITY, WHAT HAS BEEN THE RECENT TREND IN COAL PRICES?

A. I show the volatility of coal prices (without delivery) in Graph 1 below.

Graph 1



Q. HAS MESABA 1 LLC HEDGED THE PRICE OF COAL SUPPLIES?

A. No.

Q. WHAT PRICE DOES MESABA 1 LLC ASSUME FOR THE 2011 DELIVERED PRICE OF POWDER RIVER BASIN COAL, AND IS THIS A REALISTIC ESTIMATE OF THE PRICE OF COAL FOR MESABA UNIT 1?

A. Mesaba 1 LLC assumes that the cost will be $1.20/MMBtu, increasing annually thereafter by 2.5 percent. This is not a realistic estimate. For a frame of reference, the current price for delivered Powder River Basin coal is $2.02/MMBtu. Further, Xcel Energy's long-range forecast for Powder River Basin coal delivered in 2011 is [TRADE SECRET BEGINS

TRADE SECRET ENDS]. Given the uncertainty of coal delivery prices, this projected price may increase by as much as [TRADE SECRET BEGINS TRADE SECRET ENDS].

Q. WHAT IS THE COMPANY'S FORECAST FOR POWDER RIVER BASIN COAL PRICES DURING THE LIFE OF THE PROPOSED MESABA UNIT 1?

A. The Company's 30-year forecast is reflected in the Graph 2 below.

Graph 2

[TRADE SECRET BEGINS

TRADE SECRET ENDS]

Q. WHAT DO YOU EXPECT TO OCCUR WITH RESPECT TO COAL DELIVERY PRICES?

A. As a result of the capital expansion both planned and underway for western rail services, transportation costs associated with new contracts have nearly doubled. For example, the price for delivery of Powder River Basin coal in 2004 was $9.90/net ton. The current price, however, has nearly doubled to

$18.40/net ton. This doubling of price is likely attributable to the new investment in infrastructure upgrades and diesel fuel costs being incurred by the railroads. Given the plans for further expansion, I would expect to see continued upward pressure on delivery prices.

Q. MESABA 1 LLC PROPOSES BURNING A 25-75 BLEND OF PETROLEUM COKE AND COAL. DOES THAT PLAN CAUSE YOU ANY CONCERN?

A. Petroleum coke is an opportunistic fuel whose supply depends on oil-refining capacity, crude oil prices, and demand for premium-refined oil products. Petroleum coke contracts are typically short-term in duration and are priced annually. Currently, supplies of petroleum coke are tight and are expected to remain so due to crude oil availability and limited refining capacity worldwide. Strong demand for petroleum coke by offshore buyers is expected to keep domestic supply tight. Consequently, I do not believe that Mesaba 1 LLC will be able to enter into long-term agreements for petroleum coke and as such, prices will reflect this volatility.

V. CONCLUSION

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. Given the infrastructure required for delivery of solid fuels, the current and expected continued constraints in delivery capacity, volatile fuel prices, and **[TRADE SECRET BEGINS TRADE SECRET ENDS]**, Mesaba 1 LLC's plan would **[TRADE SECRET BEGINS TRADE SECRET ENDS]** significant price risk and volatility. Consequently, Mesaba 1 LLC's proposal

does not offer a hedged, predictable cost. Further, if Mesaba 1 LLC were to enter into long-term fuel supply contracts to take advantage of predictable, fixed prices, its ability to burn a variety of fuels would be cost prohibitive.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

Patrick J. Panzarino
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EDUCATION

Denver University – Completed study towards a Masters in Technology at the Daniels Graduate School of Business

New York University, B.E. - Bachelor of Engineering in Metallurgy and Materials Science

State University of New York, School of Ceramics – Studies in Ceramic Engineering

EMPLOYMENT HISTORY

Xcel Energy Services Inc. 2004 – Present
Director of Coal Supply and Combustion By-products Management: Responsible for the development and implementation of the procurement plan for the purchase of approximately $1.0B of coal and transportation services for 34M tons of sub-bituminous and bituminous coal.

NRG Energy Inc. 2001 – 2004
Director of Coal, Emissions, and Ash Management: Responsible for the purchase of $400M of coal and transportation services for a diverse portfolio of generating assets. Responsible for the formulation and implementation of the fuel procurement and transportation strategy, as well as physical and financial trading activities.

Cyprus-Amax Coal Company 1995 – 2000
Vice President of Sales: Responsible for the implementation and execution of the domestic sales plan.

Arch Coal Sales Company 1990 – 1995
President

Nerco Coal Corporation 1986 – 1990
Vice President, International Sales