PUBLIC

Surrebuttal Testimony and Schedule

James R. Alders

Before the Public Utilities Commission of
The State of South Dakota

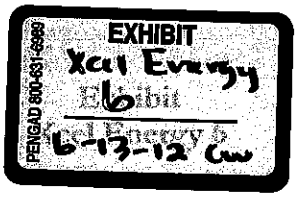
In the Matter of the Application of
Northern States Power Company, a Minnesota corporation

For Authority to Increase Rates for
Electric Service in South Dakota

Docket No. EL11-019
Exhibit___(JRA-2)

Cost Recovery for the Nobles Wind Project

June 4, 2012



I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is James R. Alders. My business address is 414 Nicollet Mall, Minneapolis, Minnesota 55401.

Q. DID YOU PREVIOUSLY PROVIDE TESTIMONY IN THIS PROCEEDING?

A. Yes. I filed Rebuttal Testimony on behalf of Northern States Power Company, a Minnesota corporation operating in South Dakota (Xcel Energy or the Company) explaining why the Nobles Wind Project (Nobles) was a cost effective resource; and why the Commission should not, particularly based on these current facts, take steps to unbundle the resources used to provide service to South Dakota customers from our integrated system.

II. SUMMARY AND ORGANIZATION

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

A. I respond to the issues raised by Staff outside witness Ms. Kavita Maini in her Rebuttal Testimony and, more specifically explain:

- That the modeling and other studies provided by the Company to demonstrate that Nobles is a cost effective resource are appropriate for consideration by the Commission in this proceeding;
- That Ms. Maini has provided no evidentiary basis to justify ignoring the results of those cost studies; and
- I further explain the consequences of disallowing cost recovery based on Staff's disagreement with Minnesota's renewable resource policy.

III. MODELING

Q. HAS MS. MAINI MODIFIED HER RECOMMENDATION WITH RESPECT TO COST RECOVERY FOR THE NOBLES PROJECT COSTS?

A. No. She continues to recommend a $612,000 disallowance based on her analysis of costs and benefits, using only the conservative Strategist model filed in Minnesota, as modified by Ms. Maini to use only a $4/ton carbon regulatory cost. She dismisses, without analysis, the Company's second Strategist modeling, despite the fact that the second modeling is consistent with her recommendation for a standalone analysis. Applying inappropriate assumptions and historical analysis, Ms. Maini also dismisses the Company's MISO energy cost comparison.

Q. MS. MAINI IS CRITICAL OF THE COMPANY FOR NOT PROVIDING THE SECOND STRATEGIST MODELING EARLIER. PLEASE COMMENT.

A. While we were generally aware of Staff's concern about resource planning resulting in cost effective resources, we had no basis to anticipate, at the time of our filing that an argument would be made that Nobles was not a cost effective resource based on the Strategist modeling provided to the Minnesota Commission. Certainly that claim did not arise in either our recent Minnesota or North Dakota rate cases.

Q. WHY DID YOU PROVIDE THE SECOND, DIFFERENT STRATEGIST MODELING IN SOUTH DAKOTA, WHEN THAT PARTICULAR MODELING WAS NOT FILED IN MINNESOTA?

A. The conservative modeling filed in Minnesota was consistent with the Minnesota renewable resource goals of serving up to 30 percent of our retail sales with renewable resources. The modeling we provided the Minnesota Commission showed that even if Nobles were the last unit added to meet the Minnesota renewable resource goal it would still have been a cost effective resource

addition. In contrast, South Dakota Commission Staff would prefer to know if Nobles is cost effective on "a standalone basis." This view was expressly stated by Ms. Maini:

> From Staff's perspective, a more reasonable approach is to assess the resource on a stand alone basis to ascertain whether its anticipated costs exceed the anticipated benefits.[1]

That is precisely what the second Strategist modeling does. It looks at Nobles as the next resource to be added and whether that particular resource is cost effective. As demonstrated in my Rebuttal Testimony, the benefits from Nobles exceed costs by approximately $80 million when analyzed as the next added wind resource.

Q. DID MS. MAINI PROVIDE ANY EVIDENCE THAT THE SECOND STRATEGIST MODELING IS NOT ACCURATE?

A. No. Instead, Ms. Maini implies that if the modeling had been provided earlier there would have been adequate opportunity to investigate it. However, there was adequate time for Ms. Maini to examine the second Strategist modeling. It was presented in a manner to allow an easy comparison to the conservative Strategist modeling. Further, the analysis I provided in my Rebuttal testimony was directly responsive to the issues raised in Ms. Maini's Direct Testimony.

Q. DID MS. MAINI CRITICIZE RELYING SOLELY ON STRATEGIST MODELING TO EVALUATE WIND RESOURCE ADDITIONS?

A. Yes. Ms. Maini asserted that Strategist modeling needs to be supplemented with a more detailed and chronological hourly production cost model to validate energy savings and suggests using, for example, the Promod production cost

[1] Maini Rebuttal at 5.

model. Ms. Maini did not, however, provide production cost modeling of her own. Nor are her criticisms valid as she failed to recognize that wind integration costs based on Promod runs were included in the Strategist modeling.

The Company recognizes that a resource planning model like Strategist may not pick up some of the dispatch nuances associated with adding wind to the system. To prepare a complete analysis regarding the costs and benefits associated with Nobles, a wind integration cost was added to the model to account for additional operating reserves that may result from incremental additions of wind. The integration costs used were $1.71/MWh in 2011 escalating to $9.39/MWh in 2035 (average escalation of 7.4%) and were based on the 2006 Minnesota Wind Integration Study. We believe that these costs represent the high range of what actual integration costs will be for Nobles. The 2006 Study was based on wind penetration levels up to 25% of total energy in Minnesota, while the addition of Nobles brought NSP's total wind to only 11% of our energy mix. Also the 2006 Study assumed a 2020 natural gas price of $9/mmBtu, while our current forecast for 2020 is only $6/mmBtu, thus overstating the cost of integration because gas prices are a primary driver of integration costs. On average, $4.6 million per year was added to the cost of Nobles for wind integration, with an NPV total of $42 million. Therefore, her assumption that production cost modeling would result in a more accurate cost benefit analysis is based on speculation and misunderstanding regarding the costs included in Strategist.

Q. ARE THERE ADDITIONAL REASONS WHY YOU DISAGREE WITH MS. MAINI'S CRITICISMS OF THE STRATEGIST MODEL AS IT RELATES TO ALSO USING A PRODUCTION COST MODEL?

A. Yes. First, production cost models are not designed to forecast the best resource over a future period of years, such as 25 years. The Promod, for example, is generally used only to study the impact of a particular resource on system production for one year, or for a specific future year. In contrast, Strategist allows us to take into account a new resource under a variety of scenarios over a span of many years (here 25 years). Xcel Energy recently began running Promod for the MISO footprint. To simulate one week of dispatch in the MISO foot print requires about 4-6 hours of computer processing. Extrapolated out to the 25 year life of Nobles a single Promod evaluation would take between 5,200 to 7,800 processing hours. Also our analysis included over 40 individual runs (with Nobles, without Nobles, $4 for carbon regulation, high gas, etc.). In all, there would literally be several years of computer processing time to fully evaluate Nobles using Promod.

Second, we have compared the results of using our Prosym production modeling with our Stategist modeling for short term resource evaluations and the results are very similar. This is to be expected because we incorporate all of the same inputs into Strategist that are used in production costs models. Strategist has the same fuel costs, heat rates, hourly load patterns, hourly wind patterns, hourly market prices, reliability constraints, and daily maintenance schedules that are used in other models.

Q. HOW DO YOU RESPOND TO MS. MAINI'S CRITICISM ABOUT USING FORECASTED AVERAGE MARKET ENERGY COSTS AS COMPARED TO ACTUAL HISTORICAL MARKET ENERGY COSTS?

A. Ms. Maini asserts that based on 2011 actual data the use of on and off peak average MISO prices, results in overstating the avoided energy from Nobles by

7% and 10% when compared to using day ahead and real time MISO hourly price data. We have no reason to doubt the results of Ms Maini's calculations and agree with her that evaluation based on hourly data is preferred for monthly averages. In fact, Strategist contains hourly market price data that explicitly includes lower market prices during high wind periods and, therefore, minimizes the avoided energy value of Nobles.

Ms. Maini also appears to confuse our two Strategist analyses and the third analysis I presented that utilized a simple forecast of average MISO prices to the expected costs of Nobles. We agree that this third analysis would be improved if we had perfect foresight and know how prices and wind generation would fluctuate on an hour to hour basis over the next 25 years. However, the third analysis was meant to be simpler than the Strategist analysis and to serve as a further verification that the Stategist results were reasonable.

Ms. Maini had the luxury of 20-20 hind sight and used actual energy prices and wind generation from 2011 in her analysis. However, each of the three analysis looked forward 25 years and appropriately used forecasted energy costs. It would be inappropriate to use 2011 actual energy costs as a forecast of energy costs for the next 25 years.

Q. MS. MAINI ALSO POINTS TO NOBLES' LOWER CAPACITY FACTOR DURING 2011 AS EVIDENCE THAT THE ENERGY SAVINGS FROM NOBLES MAY BE OVERSTATED. PLEASE RESPOND.

A. The actual generation at Nobles in 2011 equated to a capacity factor of approximately 33%, while the expected generation and that modeled in Strategist

was about 40%. The lower actual production from Nobles occurred for two primary reasons; neither of which is indicative of Nobles' future capacity factor.

First, Nobles experienced several transformer failures in 2011. Preliminary estimates are that 86 GWh (5% capacity factor) were lost due to these failures. Xcel Energy crews worked hard to solve this issue and in the first five months of 2012 only 6 GWh of wind generation have been lost due to transformer issues.

Second, because Nobles has modern automatic generation control (AGC), in 2011 MISO curtailed our wind farm a disproportionate amount. Before AGC started being installed at wind farms, system operators would have to call wind farms on the telephone and ask that generation be curtailed. With Nobles' AGC, MISO is able to quickly ramp down a portion or all of the wind farm's generation. This represents a significant advantage to the operation of the power system and AGC will be required on all new wind farms in the future. Also it is important to keep in mind that this is not incremental wind curtailment caused by Nobles and that most of this curtailment would have happened with or without the project. Nobles merely provided MISO a more flexible resource with which to regulate generation. Our records indicate that 38.5 GWh (2% capacity factor) of generation was curtailed at Nobles in 2011. With these two factors accounted for, the actual 2011 generation (and future capacity factors) is very close to the expected level.

Q. DID MS. MAINI REASSERT HER POSITION THAT CARBON REGULATION SHOULD BE VALUED AT $4/TON?

A. Yes. She asserts that $4/ton should be used in the absence of actual legislation establishing a higher range. This is another example of Ms. Maini evaluating

resource selection by looking at today's current snap shot conditions, rather than using a forecast of likely costs over the next 25 years and reviewing the information reasonably relied upon at the time the decision was made. At the time the Company conducted its Strategist analysis, it would have been imprudent for the Company to assume a future $4/ton carbon regulation cost. In fact, as I explained in my Rebuttal Testimony, based on the information available to us at the time of the analysis, the $17/ton used by the Company represented a conservative mid-range value.

Q. WHY DID MS. MAINI DISREGARD THE RESULTS FROM YOUR THIRD ANALYSIS THAT COMPARED FORECASTED MISO PRICES TO THE COST OF NOBLES?

A. She recommended disregarding it completely: " [B]ecause the limitations of the Strategist modeling are even more pronounced in this simulation." She also stated that "utilizing the actual MISO market prices are a better and more realistic representation."

Q. PLEASE RESPOND TO THOSE STATEMENTS.

A. First, the Strategist model was not used in the market comparison analysis. That analysis was a simple spreadsheet comparison of the Nobles costs and the forecasted MISO energy costs that could be used to replace the energy from the project. That comparison demonstrated that Nobles would cost $3.05/MWh less than replacement energy from MISO.

Second, our analysis used the forecast of energy prices over 25 years. As I explained above, using actual data is not a luxury we have in evaluating new resources.

Q DID THE COMMISSION CONSIDER A SIMILAR MARKET ENERGY ANALYSIS WHEN IT APPROVED AN OTTER TAIL POWER WIND PROJECT?

A. Yes. Otter Tail Power used a similar market energy comparison to support its decision to build its Luverne wind project in Docket No. EL10-011. While we do not know the specific details of OTP's analysis because it was Confidential, we are aware of the following description of that study provided to the Commission in the Staff's memorandum:

> OTP's responsive testimony compared the current and future revenue requirements of Luverne to forecasted costs of replacement power for Luverne. Although OTP's forecasted costs of replacement power may be somewhat high, it is clear that the Luverne revenue requirements, should Luverne be included in the cost of service, will be declining while the future costs of replacement power for Luverne will be increasing.

IV. COST RECOVERY FOR A SYSTEM RESOURCE

Q. PLEASE RESPOND TO MS. MAINI'S SUGGESTION THAT ANY RESOURCE COST IN EXCESS OF BENEFITS SHOULD BE DISALLOWED.

A. There are a number of problems with this suggestion. First, Nobles provides benefits in excess of the cost and, therefore, the resolution of this issue should not be made in this proceeding.

Second, even using the worst case scenario, which is clearly inappropriate for a standalone analysis, Nobles is cost-effective. The Commission should not adopt a policy of unbundling the resources used to serve South Dakota where even the worst case scenario demonstrates Nobles to be a cost effective resource. As we explained, when looked at from a system level, Nobles was within 0.11 percent (Ms. Maini has unbundled the project from the system and calculates the difference at 13 percent). Under either calculation, this does not appear to be an

appropriate case for abandoning the long-standing practice of allocating a portion of system costs to South Dakota.

Third, contrary to Ms. Maini's assertion, if the Commission elects to disallow full recovery of the Nobles costs, it will be doing so for reasons other than system costs. Rather, Ms. Maini's recommendation is based on treating Nobles like a standalone resource and considering only South Dakota's renewable resource policy. If the Commission disallows Nobles costs on that basis, it will have chosen to participate only partially in the cost recovery process for Nobles. Under that recommendation, South Dakota customers should only participate proportionately in Nobles' benefits.

Consider, that Ms. Maini is not asserting the Company should not recover its Nobles costs; but rather, that those costs should be recovered from Minnesota customers. Under that justification, Minnesota customers would be entitled to the benefits associated with the corresponding costs they pay. Further, Ms. Maini agrees that if all cost recovery is denied then South Dakota should forego receiving benefits. Similarly, partial denial should result in a symmetrical loss of benefits.

Q. HAS THE COMPANY CALCULATED THE BENEFITS THAT SHOULD BE TRANSFERRED AWAY FROM SOUTH DAKOTA CUSTOMERS IF 30 PERCENT OF THE COSTS ARE DISALLOWED?

A. Yes. Ex. __ (JRA-2), schedule 1, calculates the value of 30 percent of the benefits from Nobles (the percentage of Nobles costs Ms. Maini proposes disallowing). Based on the cost of replacement energy, reallocated PTCs, replacement capacity costs and reallocated RECs, those lost benefits would be

worth $681,000 in 2012; increasing to $828,000 in 2015; and $991,000 in 2020. In addition, $180,000 of the $600,000 bonus tax depreciation (spread over the next several years) would not be allocated to South Dakota. Not surprisingly, the lost benefits are greater than Ms. Maini's proposed disallowance of $612,000. This fact further supports finding that Nobles is cost effective.

V. INCREMENTAL INVESTMENT COSTS

Q. PLEASE COMMENT ON MS. MAINI'S CONTINUED ASSERTION THAT THE COMPANY'S INCREMENTAL INVESTMENT COSTS FOR NOBLES SHOULD NOT BE RECOVERABLE.

A. Ms. Maini does not challenge the prudence of those costs and acknowledges that those costs would also have been incurred if there had been a power purchase agreement. Her only justification for her continued recommendation appears to be that the Company should have included those costs in its earlier cost estimate. However, whether they should or should not have been included is irrelevant to whether the costs are recoverable in rates. These incremental costs are the actual, prudent costs of bringing Nobles on line and are therefore recoverable in rates.

Ms. Maini also states that I was incorrect in listing transmission interconnection costs as among the incremental costs, and references a Data Response stating that the incremental costs are production facility costs not transmission related costs. To clarify, the incremental transmission connection costs reference in my Rebuttal Testimony ($1.03 million) was for those facilities necessary to directly connect Nobles to the transmission system at Nobles Substation. The Interconnection Facilities upgrades at Nobles Substation include construction of four 34.5 kV, 50 MW wind feeder bays within the substation. These bays each

consist of a single 34.5 kV circuit breaker and four disconnect switches, conductor, metering, current transformers, relaying, and associated structural steel and foundations. These substation costs are considered to be production costs, not transmission costs.

III. CONCLUSION

Q. PLEASE SUMMARIZE YOUR TESTIMONY?

A. Nobles was necessary to meet our system renewable resource requirements. Under both the standalone Strategist analysis and under the market analysis, Nobles is a lower cost resource alternative. In addition, the benefits to South Dakota as a full participant in our large integrated system more than offset any added costs associated with including Nobles in our portfolio.

Also, it is not reasonable to disallow the prudently incurred incremental costs to bring Nobles on line.

Finally, if the Commission disallows a portion of the Nobles costs on the grounds that the costs were incurred to meet Minnesota renewable resource requirements, then there would also need to be offsetting reallocated benefits for energy costs, RECs, PTCs and bonus tax depreciation. The offsets would be greater than the disallowed costs.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.