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MPUC Docket No. E-6472-/M-05-1993
OAH Docket No. 12-2500-17260-2

BEFORE THE
MINNESOTA OFFICE OF ADMINISTRATIVE HEARINGS
100 Washington Square, Suite 1700
Minneapolis, Minnesota 55401-2138

FOR THE
MINNESOTA PUBLIC UTILITIES COMMISSION
127 7th Place East, Suite 350
St. Paul, Minnesota 55101-2147

In the Matter of the Petition of Excelsior Energy Inc. and Its Wholly-Owned Subsidiary MEP-I, LLC For Approval of Terms and Conditions For The Sale of Power From Its Innovative Energy Project Using Clean Energy Technology Under Minn. Stat. § 216B.1694 and a Determination That the Clean Energy Technology Is Or Is Likely To Be a Least-Cost Alternative Under Minn. Stat. § 216B.1693

PREPARED REBUTTAL TESTIMONY AND EXHIBITS OF EXCELSIOR ENERGY INC. AND MEP-I LLC

A. JOSEPH CAVICCHI

OCTOBER 10, 2006

EXCELSIOR ENERGY, INC.

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

PREPARED REBUTTAL TESTIMONY OF

A. JOSEPH CAVICCHI

I. INTRODUCTION AND QUALIFICATIONS

Q Please state your name.

A My name is A. Joseph Cavicchi.

Q By whom are you employed and what is your position?

A I am employed by Lexecon, an FTI Company, as a Managing Director. Lexecon is an economics and financial consulting firm that provides corporations, law firms, and government agencies with clear analysis of complex economic and financial issues for use in legal and regulatory proceedings and in strategic decision-making. Lexecon is actively involved in a wide variety of matters that can arise in the areas of economics and finance. Our practice areas include energy and environmental economics, antitrust, securities, damages, intellectual property, as well as business consulting and public policy analysis.

Q For whom are you testifying?

A I am testifying on behalf of MEP-I LLC and Excelsior Energy, Inc. (“Excelsior”), the developers of the Mesaba Energy Project (”Mesaba” or the “Project”).

Q Please summarize your professional and educational background.

A I provide economic analysis and expert testimony in various state and federal regulatory proceedings related to electricity markets. Throughout my entire career I have been directly involved with corporations, institutions, and state and federal government

regulation in relation to the electricity industry. During the past decade I have been working exclusively in the regulation of the electricity industry, and in particular carrying out quantitative modeling of wholesale electricity markets. I provide extensive regulatory and strategic advice, as well as analytical support, to electricity generation and distribution companies. The assignments combine extensive knowledge of wholesale market operations with general economic theory of contracting and electricity generation plant dispatch in order to provide companies with a rigorous approach to wholesale market analysis. I hold Masters degrees in Technology and Policy and in Environmental Engineering from the Massachusetts Institute of Technology and Tufts University, respectively. I am also a Registered Professional Engineer in the Commonwealth of Massachusetts. My curriculum vitae is attached as Exhibit __ (AJC-1).

Q Please describe your background as it relates to this proceeding.

A Throughout my career I have been involved in modeling electricity systems and assessing policy affecting the industrial organization of the industry. In practically all instances, modeling of the electricity industry involves considering least-cost system expansion under uncertainty, an issue in this proceeding.

II. PURPOSE OF TESTIMONY

Q What is the purpose of your testimony in this proceeding?

A The purpose of my testimony is to rebut various analyses presented in this proceeding in response to Excelsior's filing.

Q What is the scope of your testimony?

A My testimony first examines the evolution of integrated resource plans ("IRPs") developed for Northern States Power Company ("NSP") d/b/a Xcel Energy's northern

system ("NSP" or the "Company"), which is composed of Northern States Power Company-Minnesota and Northern States Power Company-Wisconsin. In particular, I have evaluated system expansion plans submitted by NSP during recent years and compared those with the System Impact Analysis Direct Testimony and Schedules filed by NSP witness Elizabeth M. Engelking ("Engelking Direct Testimony"). As part of this evaluation I focus in particular on the primary type of fuel NSP has determined is most appropriate to fuel its power production during the next several years, and how the fuel NSP has relied on for its proposed capacity expansion plans has shifted from coal to natural gas.

Second, I present revised versions of the Hervey Direct Testimony rate impact analyses.

Finally, I have reviewed and compared the results presented in the Engelking Direct Testimony and the Direct Testimony and Schedules of NSP witness Mark A. Hervey ("Hervey Direct Testimony") to the analytical results provided by NSP in the form of system impact studies ("Strategist" runs). I explain various differences in the system impact study results and the fact that the testimonial tabulations cannot be matched to the Strategist results.

Q What have you done to prepare your testimony?

A I have studied the Engelking Direct Testimony and Hervey Direct Testimony and any associated workpapers provided with the testimonies. I have also researched and studied various other NSP IRPs and annual filings submitted over the last few years. I have gathered from these materials various data and created exhibits and schedules presented herein to explain what I have observed. Unfortunately, NSP did not provide

the Strategist models used in preparing the 2002 Resource Plan and the various versions of the 2004 Resource Plan until October 4, 2006. I therefore have not been able to add to the record in terms of providing analysis of the assumptions made in each of the Strategist runs that underpin the radically shifting expansion plans proposed by NSP between 2002 and the present.

Q Please summarize your findings.

A First, comparing the system analyses presented in the Engelking and Hervey Direct Testimonies with recent NSP IRPs leads me to conclude that NSP's analysis to date does not provide a sound basis for determining robust system expansion plans. As I explain herein, NSP's modeling results are ever-changing and inexplicably sensitive to recent changes in underlying analytical input assumptions. Over the past few years, NSP has shifted from recommending an expansion plan that largely relied on coal-fired capacity additions over the next decade to one that essentially exclusively relies on natural gas-fired resources. This shift has occurred over a timeframe when expected future gas prices have risen considerably. These swings in modeling results and shifts in proposed expansion plan are counter-intuitive and call into question the reliability of NSP's analyses.

Second, I provide an analysis of the estimated rate impact of the Project to show that the rate impact presented in the Hervey Direct Testimony is based on assumptions, inputs, and modeling results that are provided by Ms. Engelking and represent a distorted and inaccurate representation of actual, expected rate impacts. Moreover, because the supposed results Mr. Hervey relied upon for his analyses are based on faulty assumptions, his conclusions cannot be relied upon. I offer rate impact analyses similar

in form to those provided by Mr. Hervey, but relying on inputs that represent a more accurate representation of the impact of the Mesaba facility on the Company's system. I determine that the expected rate impact is at most negligible.

Finally, the results described in the testimony of different NSP witnesses contain inconsistencies between the various witnesses and the very Strategist runs upon which they are basing their testimony. The Engelking and Hervey Direct Testimonies' results are inconsistent with, and cannot be mathematically linked to, the Strategist results provided through discovery.[1] After an extensive and careful review of the support materials provided by Ms. Engelking and Mr. Hervey, our team was unable to successfully link the results provided in their testimonies with the results provided in response to Information Request No. 4, which supposedly is the source of the inputs for the tabulations presented in the testimonies. Careful analysis reflects that adjustments have been "manually" made to the Strategist results by the witnesses that are not explained or even made explicit in their analysis, preventing the corroboration of their testimonies' findings.

III. THE EVOLUTION OF NSP'S IRP EXPANSION PLANS

Q Please describe the NSP IRP expansion plan development process as you understand it.

A The goal of sound resource planning is to determine a least-cost approach to expanding electricity production on the NSP system. NSP utilizes a least-cost system expansion planning modeling tool called "Strategist" to establish system expansion plans. NSP gathers together those assumptions required to run the Strategist model, inputs those assumptions into the model, and then utilizes Strategist to produce system expansion

[1] Response to Excelsior Information Request No. 4.

plans. As is the case with any modeling tool, there are numerous "levers" that can be exercised which impact the results. And as with modeling generally, changes to input assumptions drive the results, and thus it is imperative to scrutinize both inputs and outputs in order to understand how modeling inputs impact modeling outputs. If the model produces counter-intuitive results, the analyst must scrutinize the workings of the model to determine if the results are accurate

Q What does sound modeling practice require in terms of understanding how changes in model inputs can affect model outputs?

A Models such as Strategist are decision-making tools that often appear as "black-boxes." Without an intimate understanding of the underlying modeling algorithms, and how the model inputs affect the model outputs, it can be difficult to become comfortable with the results of various analyses. For example, modeling inputs such as fuel prices, generation plant capital costs, demand level, and energy-consumption forecast levels are subject to considerable uncertainty. Given these uncertainties it is critical that modeling analyses start with reasonable baseline assumptions and then test the impact of reasonable changes in input assumptions on the modeling results. And then, importantly, one must be able to verify how particular changes in input assumptions affect the modeling results and the reasonableness of the magnitude of the changes in results. In addition, in order for an analyst's work to be useful to others, the analyst must provide sufficient worksheets and key assumptions in order for another modeler to understand the key workings of the model and the reported changes in outcomes between various scenarios. Without being able to simply understand how inputs impact outputs, it is nearly impossible to become comfortable with a model.

Once the analyst is comfortable that the baseline model has been properly analyzed and is producing sensible results, then the model is used to test each critical assumption contained in the model against various scenarios to ensure that the resource plan selected is robust under every generally foreseeable scenario. Key drivers in electric utility resource planning are projected capital costs, forecasted fuel prices, load-growth and demand-side management assumptions, forecasted generation and transmission resource availability, emission limits and allowance costs, and likely changes in environmental law.

Q What characterizes NSP's IRP expansion plans' evolution over the past few years?

A NSP's expansion plans are relying almost exclusively on natural gas as the fuel of choice of electricity generation plants over the next decade and beyond. Exhibit ___ (AJC-2) shows the evolution of NSP's IRP expansion plans since 2002 and clearly exhibits the rather radical shift from an expected reliance on coal-fired generation resources as recently as 2002, to a practically exclusive reliance on natural gas resources as of now. This has taken place during a time when current and future natural gas prices have increased significantly, and when capital cost estimates to construct natural gas-fired electricity generation facilities have also been increasing disproportionate to other generation resources.[2]

[2] Electricity generation capital cost increases are occurring with respect to all types of electricity generation technologies, including gas-fired facilities where the previous over-supply of combustion turbines has been eliminated, putting upward pressure on gas-fired generation plant prime-mover costs, in addition to other general inflation in costs.

Q Are there also considerable changes in the mixture and timing of new resource additions forecasted by NSP?

A Yes. Exhibit __ (AJC-3) shows how the mixture of forecasted required resource additions has been changing substantially during the past few years. As recently as 2002, NSP expected to add some 1,800 MW of coal-fired resources during the next decade, in part to replace the coal-fired generation it converted to gas-fired generation as a result of the Metropolitan Emissions Reduction Project.[3] NSP is in the process of adding almost 2,000 MW of gas-fired additions that are being either built by NSP or obtained through power purchase agreements.[4] NSP's IRP submissions in year 2002 showed an expected increase in coal-fired generation to follow the near-term increased reliance on gas-fired resources. Now, as Exhibit __ (AJC-3) shows, there are numerous expected new gas generation facilities in the works by NSP that are in addition to the large amount of gas generation currently being readied to meet demand growth over the next few years (prior to 2010).

Q What cause for concern do these recent shifts in proposed expansion plans create?

A Most importantly they show an expected increased reliance on natural gas fuel supplies whose future price levels and volatility are subject to considerable uncertainty. And somewhat counter-intuitively, these shifts in proposed expansion plans come at a time when natural gas prices have increased steeply, and when natural gas-fueled power plants' capital costs have also been increasing. Thus, although there could be scenarios where an increased reliance on gas was appropriate, perhaps if gas prices were expected

[3] *See generally*, data provided in the response to Excelsior Information Request No. 5.
[4] ICF Consulting, Analyzing Xcel's 2004 Integrated Resource Plan, November 22, 2005.

to be low and/or gas plant capital costs were decreasing, at first glance the increased shift toward natural gas is somewhat alarming.

Q Do the Company's currently approved expansion plan forecasts represent the precise path forward that NSP will follow?

A Unfortunately it is very difficult to understand exactly what type of expansion is expected going forward. While the Minnesota Public Utilities Commission ("MPUC") has indicated in a July 2006 Order that NSP should begin pursuing options to provide expanded generation capacity in the future, actual decisions will not be made until NSP completes a certificate of need review process. And it is likely the case that NSP will submit another IRP (currently due July 2007) while certificate of need proceedings are ongoing. These multiple submissions containing marked changes in suggested expansion plans are troubling.

For example, since the fall of 2004, NSP has revealed three different IRP analyses, one in November 2004, another in November 2005, and another still in September 2006. We see in each of these plans marked changes in the expected capacity additions as described above. Thus, what is observed currently could quickly change and shift back toward an indication that coal fuel generation may be economical.

Q How can such variation in potential expansion plans occur?

A Such variation must be occurring as a result of the assumptions underlying the Strategist analyses from which NSP's system expansion plans are derived. Because Strategist results are a direct function of the series of assumptions required to establish an expected least-cost expansion plan, there should be a straightforward means by which to understand how system expansion plans may change over time. Although as I explain

below, considerable difficulty is encountered when trying to understand and evaluate the differences observed in the expansion plans associated with the different vintage IRPs.

Q What are the reasons for the changes?

A NSP was asked to explain the reasons for the shifting proposed expansion plans, but has not done so at the time of filing this testimony. It seems that the Strategist model will produce significantly different expansion plans with only minor changes in input assumptions. Since we have experienced gas prices at levels that are two to four times the levels they were in 2002, and NSP's gas price assumption input has increased significantly, the Strategist output must be reacting to other variables, to such an extent that they more than offset these swings in gas prices. This is of considerable concern given its impact on system expansion planning, and the long lives of generating facilities. Under such a planning approach that produces recommended plans that shift each time short-term changes in the markets occur, a long-lead-time generation resource such as a coal plant may not be consistently and explicably identified as economical; then such a facility may never get built, even though it is the most robust choice under a wide variety of planning scenarios. And the consequences of delays, in particular in the current context, may result in significant inability to respond in the future.

Q Why is delay particularly troubling in the current context?

A As I described above, NSP's system expansion plans show continued reliance on gas until the middle of the next decade. This means that between now and the middle of the next decade NSP will have a significant portion of its expected fuel costs subject to gas price variation, as NSP's analyses rely on fuel price forecasts that will be by definition wrong. Moreover, NSP has made no indication that it plans to hedge its long-

term fuel costs, but instead plans to make presumably short-term market purchases, again relying on only one fuel price forecast (as opposed to considering various fuel price forecasts as I explain below). In addition to the exposure ratepayers will experience to natural gas price fluctuations from 2011 to 2015, there is no assurance that NSP will add coal-fired generation in the middle of the next decade. If it does not, NSP will be faced with an ever-increasing reliance on natural gas, which may be extremely costly.

Q How can you be sure that this is a significant risk?

A While system planning never takes place under conditions of complete certainty, I have prepared Exhibit __ (AJC-4) to show graphically the primary fuel reliance changes underlying the most recent system expansion plan offered by NSP. As Exhibit ___ (AJC-4), shows clearly, NSP's most recent projected expansion plan relies on gas near term, with an expected enormous increase in coal-fired generation beginning in the middle of the next decade. Exhibit AJC-4 also shows how Mesaba would lessen projected gas consumption as it reduces NSP's demand for natural gas. Because NSP forecasts that projected gas consumption drops considerably in the years following the dates the new coal plants come on line, this also signals a reduction in utilization of the gas plants. This means that a substantial amount of newly built gas-fired capacity would become considerably less utilized, calling into question whether the investments are cost-effective under an uncertain future. In essence, the current proposed system expansion plans resulting from IRP analyses seem to indicate that considering building gas plants is a good idea over the next few years, but a shift back toward coal is inevitable. But such a strategy entails considerable risk, as NSP has not considered in any of its analyses the

potential impacts of future environmental policies that increase future demand for natural gas and increase costs for relying on coal.

Q Please explain.

A The analyses that NSP has provided in this proceeding comparing the system with and without the Mesaba plant essentially ignore important uncertainties and instead focus on a single scenario that NSP has developed under which the Mesaba facility costs more than relying on natural gas. NSP's witness Engelking's Direct Testimony and Schedules present an extremely narrow set of system impact analyses that focus primarily on Mesaba's cost structure without evaluating how the addition of the Mesaba facility may guard against future increased gas prices and the impact of more aggressive global warming policy. Moreover, given that NSP's so-called resource plan analyses provided with Ms. Engelking's Direct Testimony do not consider gas price variations or greenhouse gas policy, the outcome showing increased reliance on coal occurring years into the future must be considered at a minimum as an untested future outcome.

Q What do you conclude then regarding NSP's analyses of the economic impact of the Mesaba facility on the NSP system?

A I conclude that it is insufficiently narrow in its focus to be useful as anything more than a single scenario for how Mesaba may impact the system. Considering only one system expansion plan, with marked differences when compared to the most recently submitted plan, as a basis for comparing the economic impact of Mesaba ignores at least two important elements impacting this type of analysis: fuel price uncertainty and environmental regulatory framework. At a minimum there need to be several scenarios under various fuel price and environmental policy futures (each of which will entail

different projected system expansion plans) against which Mesaba's impact can then be compared to see if it represents an appropriate plant addition. Moreover, to the extent other underlying assumptions (e.g., demand and DSM forecasts, generation availability, going-forward capital costs, etc.) are found to be critical to ensure the completion of a robust analysis, these ought to be considered as well.

IV. RATE IMPACT

Q How has the Hervey Direct Testimony presented an estimated expected incremental impact on rates due to the proposed Mesaba power purchase agreement?

A Mr. Hervey has indicated that he believes that the expected rate impact associated with Mesaba would be derived from the addition of the following three quantitative impacts: generation revenue requirements, NSP capital structure, and incremental transmission costs. Mr. Hervey has gathered the input data to conduct his analyses from Ms. Engelking for the generation revenue requirements; Mr. George E. Tyson II and Mr. Marvin E. McDaniel for the capital structure impact; and Mr. Richard Gonzalez for the incremental transmission costs. Mr. Hervey's Direct Testimony then presents the summation of these three impacts under three different generation revenue requirement scenarios and presents estimated expected rate impacts for the years 2010-2033, with an emphasis on the year 2012 impact. He concludes that he believes the expected incremental rate impact will likely be 8.7% in the year 2012 (an increase to an average monthly customer bill (750 KWh) of approximately $5.50),[5] although he notes that he expects that the expected rate impacts ought to decline over time.

[5] Hervey Direct Testimony at Table 2, corrected per Errata dated October 6, 2006.

Q Does Mr. Hervey explain why he focuses on the year 2012?

A No. He apparently elected to emphasize the first year during which Mesaba will be operational in order to present a view that a large expected rate impact will result. Although, he fails to mention that the Mesaba power purchase agreement is structured in a way where there may be higher costs in the first years of operation, or that it may be the case that there are not costs incurred that are any higher in the early years than the costs that would be incurred running NSP resources. Focusing on 2012, and using results that clearly disfavor Mesaba, are inappropriate and provide little probative value.

Q Is Mr. Hervey's analysis realistic or valuable to an analysis of the Project's expected impact on NSP rates?

A No. As I describe below, his estimated expected first-year rate impact is based solely on Strategist runs presented by Ms. Engelking, which are flawed and overestimate the impact of the addition of the Mesaba plant on generation revenue requirements. Moreover, the rebuttal testimony of Mr. Gale and Ms. Meal explains that Mr. Hervey's capital structure impacts are inappropriate and should not be included. In addition, it does not appear that transmission system impacts should be included either, as to the best of my knowledge these types of impacts have not been included for any generation source added by NSP, and thus including them for Mesaba is inappropriate. Finally, a review of Mr. Hervey's roughly 20 years of projected expected estimated rate impacts reveals a rather unusual pattern that calls into question the overall accuracy of the

Strategist runs that have been presented by Ms. Engelking and supposedly relied upon by Mr. Hervey.[6]

Q Please explain what you believe is a more appropriate approach for estimating the expected rate impact.

A I believe that with respect to the type of future-year scenario analysis that is being conducted to analyze the impact of the Mesaba facility on the NSP system, it is more appropriate, straightforward, and logical to estimate expected rate impact by examining the net benefit or cost of adding the Mesaba plant appropriately derived by comparing the NSP system with Mesaba and then as it would likely be without Mesaba.[7] This net impact can then be converted into a fixed annual dollar amount for the years when Mesaba is operational in the analysis (in this instance 2012-2033) and thereafter an expected rate impact can be estimated using the annualized value. The potential impact can then be sensitized by simply changing the expected incremental benefit.

Q What leads you to conclude that the analysis provided by NSP is not reflective of any likely real outcome?

A Mr. Hervey's current analysis is based on generation revenue requirements estimated for over 20 years. An examination of the trend of the estimated expected rate impacts reveals that they are quite volatile and cannot possibly be representative of the type of impact that will occur due to the Mesaba power purchase agreement. The addition of Mesaba will ultimately result in a fixed monthly capacity charge and a fixed

[6] I note that Mr. Hervey's workpapers provided in the response to Information Request No. 86 do not match the Strategist runs provided in the response to Information Request No. 4. Thus, I am unable to confirm the source of the analyses that Mr. Hervey has relied upon when making his analyses.

[7] This means not conducting the same type of analysis that Ms. Engelking conducted but instead examining a resource expansion plan that has been developed using a more robust analysis. Such an analysis is described in the Rebuttal Testimony of Maria Fusco Scheller.

operation and maintenance charge that escalates, but is only 10-20% of the capacity charge. Because the tariff is designed to produce a capacity payment that reduces in real terms over time, logically the impact of Mesaba on rates will start at some level and then decline over time. Exhibit __ (AJC-5) depicts this graphically against what Mr. Hervey has presented. As Exhibit __ (AJC-5) shows, Mr. Hervey's impact is highest in 2012, but moves up and down with considerable volatility over the years. As the revised estimated expected impact shows, the logical nominal impact on rates will start out at higher levels in 2012 and 2013, sloping downward and then leveling off. The volatility produced by NSP's Strategist modeling runs must be due to assumptions of NSP, or the model itself, that have nothing to do with the Mesaba facility.

Q Why is the incremental rate impact shown in Exhibit ___ (AJC-5) so much lower than Mr. Hervey's estimate?

A Instead of the inappropriate year 2012 impact that Mr. Hervey has used in his analyses of nearly $270 million dollars, I have used an annualized impact based on an estimated net present value increase in costs with Mesaba of $100 million over the years 2012-2033 reported in the Rebuttal Testimony of Maria Fusco Scheller. This translates to about $15 million per year, which as Exhibit ___ (AJC-5) shows is a little less than .5% yearly increase over the multi-year period. This results in a little more than a $.25/month expected impact on a residential customer's bill with a 750 KWh usage, which is essentially negligible. Moreover, to the extent there is an impact, the trend in the impact slowly decreases, which is consistent with the structure of the Mesaba power purchase agreement and the impact it should have on NSP's rates.

V. TESTIMONIAL INCONSISTENCIES

Q Please describe what you mean by testimonial inconsistencies.

A In this instance I use the phrase "testimonial inconsistencies" to refer to two types of problems observed with respect to the Engelking and Hervey Direct Testimonies. First, the results presented in each of their testimonies cannot be directly linked to the supposed input files, which were provided in Information Response Nos. 4 and 5 as a series of Strategist runs' inputs and outputs. I understand that these various analyses are the basis of the tabulations presented by Ms. Engelking and Mr. Hervey, but I have been unable to match up the Strategist runs to the tabulations in the testimony. And second, Ms. Engelking and Mr. Hervey present certain results that logically one would expect to be exactly the same, but a review of their testimonies reveals unexplained differences.

Q What types of difficulties were encountered when trying to verify the analyses in the Engelking and Hervey Direct Testimonies?

A The main problem encountered was that the Strategist results received through Information Response No. 4 could not be directly utilized to verify the tabulations presented by Ms. Engelking and Mr. Hervey. For example, the Engelking Direct Testimony presents three tabulations (Tables 1-3) where Ms. Engelking compares the results of her newly presented resource plan's Present Value Revenue Requirement ("PVRR") with a resource plan that includes the Mesaba facility. Ms. Engelking indicates in her testimony that the various PVRRs were calculated using Strategist. But when examining the Strategist results, it was not possible to match the values presented in her tables to the Strategist output. This same problem exists when examining Mr. Hervey's testimony as well. That is, Mr. Hervey presents tabulations in

Exhibit___ (MAH-1), Schedules 2-6, that cannot be directly linked to the Strategist results. Thus, both testimonies suffer from a similar problem of not being able to be linked to Strategist modeling results.

Q What have you done to investigate these differences?

A To explain the difficulties associated with connecting the Strategist results to the testimonies' tabulations, I prepared Exhibit __ (AJC-6) which presents a summary of the results of the analyses I conducted. As Exhibit __ (AJC-6) shows, attempts to match the Strategist output to the testimonial tabulations resulted in the observed differences. Although in some instances it was possible to get close to the values presented, there were always inexplicable differences. Moreover, as Exhibit __ (AJC-6) shows, the only means by which it was possible to closely match the results in the testimonies was to use different Strategist outputs. That is, it appears Mr. Hervey used revenue requirement results, while Ms. Engelking used utility cost estimates.

Q What else does the analysis show?

A The results shown in Exhibit __ (AJC-6) also show that the calculated differences between the newly revised resource plan with and without Mesaba presented by Ms. Engelking and Mr. Hervey differ considerably. And the various comparisons they make also differ considerably. Thus, there is not a consistent basis presented for making comparisons of the impact of the Mesaba facility on the Company's system.

Q What does the analysis lead you to conclude?

A I conclude that Ms. Engelking and Mr. Hervey must be making adjustments to the Strategist outputs that have not been reported. Without being able to verify the

adjustments themselves, and the purpose of the adjustments, it is not possible to verify their analyses or conclude that they are accurate.

VI. CONCLUSIONS

Q Please summarize your conclusions.

A I conclude that the Engelking and Hervey Direct Testimonies cannot be relied upon by the MPUC to make a determination on Excelsior's application. The results and analyses presented in the Engelking Direct Testimony are not sufficiently robust such that useful conclusions can be reached. Moreover, the inexplicable shifts in NSP's IRPs' suggested expansion plans create significant cause for concern: to the extent NSP's system becomes significantly reliant on gas-fired resources in an environment where gas prices are high and volatile, customers will experience significant variation in electricity rates. Next, I conclude that Mr. Hervey's estimated expected rate impact is far too high and uncertain due to its reliance on faulty analyses for its derivation. At most the expected rate impact ought to be negligible and I show that logically his multi-year analysis does not make sense, and offer a more appropriate approach for considering the expected impact of the Mesaba power purchase agreement on NSP's rates. Finally, I conclude that NSP's witnesses have not provided workpapers and back-up materials that allow the verification of the translation of their results into testimonial exhibits.

Q Does this conclude your rebuttal testimony in this case?

A Yes.

EXHIBIT ____ (AJC-1)

EXHIBIT ____ (AJC-2)

EXHIBIT ____ (AJC-3)

EXHIBIT ____ (AJC-4)

EXHIBIT ____ (AJC-5)

EXHIBIT ____ (AJC-6)