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April 12, 2010

VIA ELECTRONIC FILING

Burl W. Haar
Executive Secretary
Minnesota Public Utilities Commission
121 Seventh Place East, Suite 350
St. Paul, MN 55101

Re: In the Matter of the Petition of Minnesota Energy Resources Corporation–PNG for Approval of a Change in Demand Entitlement for its Northern Natural Gas Transmission System;
Docket No. G011/M-09-1284

Dear Dr. Haar:

Enclosed please find the Reply Comments of Minnesota Energy Resources Corporation ("MERC") in response to the April 2, 2010 Comments of the Office of Energy Security ("OES") in the above-referenced docket.

Thank you for your attention to this matter.

Sincerely yours,

/s/ Michael J. Ahern

Michael J. Ahern

cc: Service List

STATE OF MINNESOTA
BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

David C. Boyd	Chair
J. Dennis O'Brien	Commissioner
Thomas Pugh	Commissioner
Phyllis A. Reha	Commissioner
Betsy Wergin	Commissioner

In the Matter of the Petition of Minnesota Energy Resources Corporation-PNG for Approval of a Change in Demand Entitlement for its Northern Natural Gas Transmission System	Docket No. G011/M-09-1284

REPLY COMMENTS OF
MINNESOTA ENERGY RESOURCES CORPORATION

Minnesota Energy Resources Corporation-PNG ("MERC" or "Company") submits to the Minnesota Public Utilities Commission ("Commission") these Reply Comments in response to the April 2, 2010 Comments of the Minnesota Office of Energy Security ("OES") in the above referenced matter.

A. Design-Day Requirements

Based on its review, the OES concluded that MERC conducted its design-day study using a statistically valid model, but the OES had concerns that the analysis may not be able to fully ensure system reliability on an all-time peak day. The OES noted that its primary concern relates to estimating peak-day firm sales throughput, which requires the Company to estimate daily interruptible and transportation customer use before estimating firm sales. The OES also pointed out that MERC is attempting to mitigate the design-day risk associated with interruptible and transportation customers by requiring gas meter telemetry.

The OES also stated that in discussing the calculation of peak day throughput for MERC-PNG's Viking PGA system (Docket No. G011/M-09-1283), the Company noted that it had

observed an error in the weather input data used in the Northern PGA design day analysis. The OES noted that it was unaware what impact this error may have on estimated peak day usage and that its conclusion about peak day firm reliability may change based on updated data from MERC.

The OES recommended that MERC provide the following information in its Reply Comments:

1. an updated design day analysis, and all supporting regression models and data, that corrects the data error referenced by the Company in its discussions with the OES;
2. a full discussion detailing how MERC intends to install telemetry for its transportation customers and an estimate of how long it will be before it has adequate daily data to estimate its firm design day more accurately.

The OES also noted that MERC's adjusted HDD calculation is different from the official calculation used by the National Weather Service. Given this difference, the OES recommended that MERC also provide it its Reply Comments:

3. a full discussion explaining why it uses a different calculation and what, if any, impact using the official wind chill calculation has on MERC's design-day forecast.

The OES also recommended that:

4. on a going-forward basis, MERC-PNG conduct its design day analysis using weather data from the following weather stations: Cloquet, MN; Minneapolis-St. Paul, MN; Rochester, MN; and Worthington, MN.

Response

1. Updated Design Day Analysis

MERC has completely re-run the PNG-NNG peak day regressions following correction of a bad link to certain weather data. The revised regressions and all data are contained in the attached Excel file: "PNG-NNGWinter2010PeakDayWindChill20100315.xls." The revised total peak day calculation for PNG-NNG is provided in the attached Excel file "Summary MERC PNG NNG 2010 Peak Day Estimate REVISED 04 12 2010.xls". The "Interruptible, Transportation & Joint Interruptible" peak day adjustment, based on monthly data, was revised to exclude data from December 2008, which showed an unexplained spike in PNG-NNG non-firm billed volumes. The revised Design Day estimate for PNG-NNG is 206,333 Dth.

2. Installation of Telemetry

MERC first notes that in the Company's last rate case in Docket No. G007,011/GR-08-835, the Commission approved MERC's proposal to require telemetry for all interruptible and transportation customers.[1] MERC has put together a project team to address the telemetry installation. The team is currently in the process of reviewing equipment. MERC will look at utilizing both company personnel as well as 3rd party contractors to expedite the installations. MERC anticipates that the telemetry units will become functional at the time of installation. The current schedule in the business case is for installation to be completed in late 2010/early 2011.

[1] In footnote 5 on page 5 of the OES's Comments, the OES noted that the Commission has required MERC to continue to provide balancing service for its Small Volume Interruptible customers, and the OES concluded that it will still be necessary for MERC to estimate daily use by Small Volume Interruptible customers in its estimate of peak-day use by firm customers. The Commission, however, approved MERC's proposal to require these customers to install telemetry while also requiring MERC to continue its Small Volume Balancing Service. Therefore, once telemetry is in place, it will no longer be necessary for MERC to estimate daily use by Small Volume Interruptible or Transportation customers. *See* Findings of Fact, Conclusions of Law, and Order, Docket No. G007,011/GR-08-835 (June 29, 2009) at 17-18.

3. Impact of Wind Chill Calculation

MERC-PNG uses an Adjusted Heating Degree Day based on 65 degrees Fahrenheit (AHDD65) as its traditional weather variable for design day planning. The AHDD65 makes a simplified linear adjustment to the industry standard Heating Degree Day based on 65 degrees Fahrenheit to approximate the effect of wind speed on natural gas demand. The HDD65 equation is HDD65=MAX(0,65-AvgTemp) where AvgTemp is the average temperature for the day. The AHDD65 equation is AHDD65=HDD65*((100+Windmph)/100)) where Windmph is the average wind speed for the day expressed in miles per hour. Empirical evidence suggests that adjusting for wind effects on heating demand improves forecasting accuracy. The exact nature of the "best" wind adjustment may differ between service territories or between residential, commercial or industrial customers.

The National Weather Service offers a wind chill calculation that is designed to compute how cold a specific combination of ambient temperature and wind speed feels on exposed human skin. One of the primary uses of this wind chill calculation is to determine the number of minutes of safe outdoor exposure before the onset of frostbite. The current NWS wind chill equation is non-linear, requires average daily temperature to be below 50 and average wind speed to be above 3 mph:

Wind Chill=IF(AvgTemp<50,IF(Windmph>3,(35.74+(0.6215*AvgTemp)-(35.75*Windmph^0.16)+(0.4275*AvgTemp*Windmph^0.16)),AvgTemp),AvgTemp)

The wind chill calculated as above can be used as a temperature surrogate in computing a "wind chill heating degree day" based at 65 degrees Fahrenheit, or WCHDD65 as WCHDD65=MAX(0,65-wind chill). Although there are differences between exposed human skin and the various compositions of the exterior walls of homes and buildings, this method of

adjusting for wind effects on ambient temperature may provide a better statistical "fit" for some regions or customer classes for peak day forecasting purposes.

There are two generally accepted "goodness of fit" statistics for regressions: sigma, also called the standard error of the regression, and R-Squared, also called the percent of variability in the dependent variable (demand) that is explained by the independent regression variables (weather and day indicators). Lower sigmas indicate less "spread" of the data around the regression line and therefore a better regression. Higher R-Squared values indicate a better regression.

MERC-PNG ran several ordinary least squares regressions to compare the results when using the AHDD65 variable with the results when using a WCHDD65 variable. These regressions were added to those already performed for the initial filing. A new regression detail file including all data used and Excel regression results is attached ("PNG-NNGWinter2010PeakDayWindChill20100315.xls"). The differences between using AHDD65 and WCHDD65 are summarized for all of MERC-PNG in the attached summary file ("MERCWindChillTestingSummary20100319.xls"). MERC-PNG uses the Adjusted R-Squared statistic in the summary attachment because it corrects for the potential error introduced when comparing (non-adjusted) R-Squared values for regressions using different numbers of variables.

As the attached summary file shows, the WCHDD65 regression has a 2.4% higher sigma (9,564 vs. 9,336) and a lower Adj. R- Squared (0.834 vs. 0.841) than the regression using the AHDD65 variable for MERC-PNG-GLGT. Both goodness of fit measures indicate that, for MERC-PNG-NNG, the AHDD65 variable is better at predicting the load response to a combination of wind and temperature than the WCHDD65 variable. The AHDD65 regressions

have a 2% lower sigma for PNG-VGT, a 2.4% lower sigma for PNG-NNG, and a 13.3% lower sigma for PNG-GLGT than the comparable WCHDD65 regressions.

The results of this analysis do not provide sufficiently compelling evidence for MERC-PNG to switch from using the traditional AHDD65 variable to a wind-chill based variable such as WCHDD65.

4. Weather Stations

As noted by the OES, MERC believes that use of weather data from Worthington, Minnesota, which is located in the middle of the Company's southwestern Minnesota customer base, provides more robust results that the use of data from Sioux Falls, South Dakota. The Company therefore agrees with the OES's recommendation to conduct its design-day analysis using weather data from Cloquet, Minneapolis-St. Paul, Rochester, and Worthington on a going-forward basis.

B. Demand Entitlement Level

The OES stated that based on a review of MERC-PNG's October 2009 and November 2009 PGAs, it appears that MERC incorrectly labeled a TFX12 contract in its November 2009 PGA as a TFX7 contract. The OES recommended that MERC provide a discussion in its Reply Comments clarifying whether the TFX contract included in the Company's November 2009 PGA filing should be a seven-month or a twelve-month contract.

Response

The OES is correct that MERC incorrectly labeled a TFX12 contract in its November 2009 PGA and 2008-09 Demand Entitlement filing as a TFX7 contract. The OES correctly designated this capacity as TFX12 capacity in OES Attachment 5. MERC had used the TFX7

classification to differentiate rates between summer and winter, but based on comments from the OES in the 2008-09 Demand Entitlement filing, MERC classified the capacity as TFX12 in the 2009-10 filing.

C. Reserve Margin

The OES noted that the Company's entitlement proposal results in a positive reserve margin for MERC-PNG's Northern PGA system customers of 13.62 percent, which is an increase of 13.00 percent from the 2008-2009 reserve margin of 0.62 percent. The OES stated that this change is a significant increase in the reserve margin over the previous heating season and results in a reserve margin that is significantly higher than the five percent threshold that the OES considers an adequate reserve margin. The OES recommended that MERC provide a full discussion in its Reply Comments justifying the large reserve margin on its Northern PGA system.

Response

As part of MERC-PNG's total firm entitlement on NNG, MERC has an agreement with LS Power (Cogentrix), where MERC as an option to call on capacity and supply from LS Power up to twenty (20) days from December through February. MERC pays $130,674 each month for a total of $392,022 on an annual basis. If MERC were to terminate this agreement and acquire winter TFX5 capacity from NNG, MERC would need to contract for 8,839 Dth TFX volumes with NNG. This number was calculated by taking the total firm entitlement of 231,064 Dth subtracting out the LS Power capacity of 26,375 Dth which leaves 204,689 Dth. Assuming a 5% positive reserve margin, MERC would need to contract with NNG for 8,839 Dth TFX5 capacity. This volume is calculated by taking the design day volume of 203,360 Dth multiplied by 1.05, which results in a firm entitlement requirement of 213,528 Dth. Taking the 213,528 Dth less the

204,689 Dth results in the amount of TFX5 that would need to be acquired. Taking the 8,839 Dth multiplied by NNG's maximum tariff rate of $15.153 times five (5) months equals an annual cost of $669,687. MERC's customers are better served by having a larger reserve margin, because it results in $277,665 savings by having the LS Power option compared to purchasing additional TFX5 capacity on NNG.

DATED this 12th day of April, 2010.

Respectfully submitted,

DORSEY & WHITNEY LLP

/s/ Michael J. Ahern

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Attorney for MERC

AFFIDAVIT OF SERVICE

STATE OF MINNESOTA)
) ss.
COUNTY OF HENNEPIN)

Sarah J. Kerbeshian, being first duly sworn on oath, deposes and states that on the 12th day of April, 2010, the Reply Comments of Minnesota Energy Resources Corporation were electronically filed with the Minnesota Public Utilities Commission and the Minnesota Department of Commerce. A copy of the filing was delivered by electronic service or first class mail to the remaining individuals on the attached service list.

/s/ Sarah J. Kerbeshian

Subscribed and sworn to before me
this 12th day of April, 2010.

/s/ Paula R. Bjorkman
Notary Public, State of Minnesota

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