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March 10, 2010

Burl W. Haar  
Executive Secretary  
Minnesota Public Utilities Commission  
121 7<sup>th</sup> Place East, Suite 350  
Saint Paul, Minnesota 55101-2147

RE: **Comments of the Minnesota Office of Energy Security**  
Docket No. G011/M-09-1283

Dear Dr. Haar:

Attached are the *Comments* of the Minnesota Office of Energy Security (OES) in the following matter:

A request (*Petition*) submitted by Minnesota Energy Resources Corporation-PNG (MERC-PNG or Company) for approval of a change in demand entitlements on its Great Lakes Gas Transmission (Great Lakes) pipeline system.

The *Petition* was filed on November 2, 2009 by:

Greg Walters  
Regulatory and Legislative Affairs Manager  
Minnesota Energy Resources Corporation  
519 1<sup>st</sup> Avenue SW  
P.O. Box 6538  
Rochester, MN 55903-6538

Based on its concerns associated with MERC-PNG's design-day calculations, the OES withholds recommendation in this proceeding until the Company provides additional information in its Reply Comments. Given these concerns, the OES recommends that MERC-PNG provide the following in its Reply Comments:

- a full discussion explaining why its heating degree day adjustment differs from the National Weather Service's calculation standard and what, if any, impact using the official wind chill calculation has on its design-day forecasts;
- a full discussion detailing how it intends to install telemetry on its transportation customers and an estimate of how long it will be before it has adequate daily data to more accurately estimate its firm design day;

- a full discussion explaining how the Company arrived at its interruptible and transportation customer usage estimates that it incorporates into its design-day analysis;
- a full discussion of whether MERC-PNG is examining other techniques to improve its interruptible customer usage estimates;
- a full discussion explaining why it chose the 97.5 percent confidence level that it uses in its design day analysis;
- a full analysis, including supporting calculations, comparing demand costs at the 97.5 percent confidence level and at the 99.9 percent confidence level in its volume risk adjustment; and
- a full discussion explaining the circumstances surrounding the peak day sendout during the 2008-2009 heating season.

The OES also recommends that MERC-PNG correct the calculation error in its monthly PGA filing related to its Call Option rates as soon as possible and refund any, and all, over-recoveries associated with this error in its September 1, 2010 true-up filing.

The OES is available to answer any questions that the Commission may have.

Sincerely,

/s/ ADAM JOHN HEINEN  
Rates Analyst  
(651) 296-6329

AJH/ja  
Attachment



BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

COMMENTS OF THE  
MINNESOTA OFFICE OF ENERGY SECURITY

DOCKET NO. G011/M-09-1283

**I. SUMMARY OF MERC-PNG'S PROPOSAL**

Pursuant to Minnesota Rules 7825.2910, subpart 2 (Filing Upon Change in Demand), on November 2, 2009, Minnesota Energy Resources Corporation-PNG (MERC-PNG or Company), submitted a demand entitlement filing (*Petition*) for its Great Lakes Gas Transmission, L.P. (GLGT or Great Lakes) pipeline system.<sup>1</sup> In its *Petition*, MERC-PNG requests the Minnesota Public Utilities Commission's (Commission) approval to "change demand levels by type" on the GLGT system for service to its Minnesota firm customers. Specifically, MERC-PNG requests to change its level of overall demand entitlement (capacity). In addition, MERC-PNG requests approval to recover the associated demand costs in the monthly Purchase Gas Adjustment (PGA) effective November 1, 2009. The Minnesota Office of Energy Security (OES) provides comments supporting MERC's proposal below.

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<sup>1</sup> MERC-PNG also serves Minnesota customers off of the Northern Natural Gas (Northern) pipeline system and the Viking Gas Transmission (Viking) pipeline system. On November 2, 2009, MERC-PNG submitted the following requests with respect to these two systems:

- A request to change the Company's demand entitlements on the Northern system for the 2009-2010 heating season in Docket No. G011/M-09-1284; and
- A request to change the Company's demand entitlements on the Viking system for the 2009-2010 heating season in Docket No. G011/M-09-1285.

In addition, on November 2, 2009, MERC-NMU (NMU), a division of Integrys Energy, submitted a request to change demand entitlements in Docket No. G007/M-09-1282. The OES separately addresses the requests in each of these dockets.

## II. OES ANALYSIS OF MERC-PNG'S DEMAND PROPOSAL

The OES reviewed MERC-PNG's proposed design-day requirement, proposed demand entitlement, and resulting reserve margins. Additionally, the OES compared this year's amounts with previous years' amounts. The OES's analysis of the Company's request includes three parts:

- MERC-PNG's GLGT PGA system proposed Design-Day Requirement, Demand Entitlement Level, and Reserve Margin;
- MERC-PNG's GLGT PGA system specific proposed demand entitlement changes; and
- MERC-PNG's Great Lakes PGA System Cost Recovery Proposal.

### A. *MERC-PNG'S GLGT PROPOSED DESIGN-DAY REQUIREMENT, PROPOSED DEMAND ENTITLEMENT LEVEL, AND RESULTING RESERVE MARGIN*

#### 1. *Design-Day Requirement*

##### a. *Peak-Day Calculation*

In its *Petition* and in response to OES discovery, MERC-PNG explained the peak-day model it uses to determine the design-day requirement and provided the model results and input data in its response to OES Information Request No. 2 (OES Attachments 1). Based on its review, the OES concludes that the MERC-PNG conducted its design-day studying using a statistically valid model. However, the OES is still concerned that the Company's design-day analysis may not ensure sufficient volumes on a peak day as defined by Commission practice.<sup>2</sup> Before discussing its concerns with MERC-PNG's design-day calculations, the OES provides a brief description of the Company's design-day analysis.

MERC-PNG conducts its design-day and peak-day analyses using statistical techniques, specifically ordinary least squares (OLS) regression. The Company's regression analysis is based on daily system throughput, wind-adjusted heating degree days (AHDDs),<sup>3</sup> and other significant independent variables (*e.g.*, month, day of the week) for the months of December through February over the past three heating seasons (*i.e.*, 2006-2007, 2007-2008, 2008-2009).<sup>4</sup> This

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<sup>2</sup> Minnesota Rules 7825.2400, subp. 13d, defines a design-day as: "a 24-hour-day period of the greatest possible gas requirement to meet firm customer needs." The Commission later clarified this to mean the coldest day in the previous 20 years, which on the MERC-PNG Great Lakes PGA system is -34°F or 99 HDDs.

<sup>3</sup> Commission Staff has indicated concerns, in another utility's demand entitlement filing, about using AHDD when conducting a design-day analysis. MERC-PNG notes in its response to OES Information Request No. 3 (OES Attachment 2) that AHDDs produce more robust regression results than using non-wind aided HDDs.

<sup>4</sup> The OES notes that MERC-PNG's adjusted HDD calculation is different than the official calculation used by the National Weather Service (NWS). Given this difference, the OES recommends that MERC-PNG provide, in its *Reply Comments*, a full discussion explaining why it uses a different calculation and what, if any, impact using the official wind chill calculation has on MERC-PNG's design-day forecast.

regression analysis allows MERC-PNG to estimate weather's (AHDDs) impact on system throughput and then compare this impact to the Company's all-time system peak day. This comparison then allows MERC-PNG to estimate total system throughput, based on current customer counts and system characteristics, if a day similar to the system's all-time peak sendout were to occur during the heating season. Finally, the Company includes a volume risk adjustment, removes interruptible and transportation customer usage, and applies a customer growth figure to its estimated total system throughput.

As noted above, while the OES concludes that MERC-PNG conducts its design-day analysis using a statistically valid technique, the OES is concerned that this analysis may not be able to fully ensure system reliability on an all-time peak day. The OES's primary concern relates to estimating peak-day firm sales throughput. To estimate peak-day firm throughput, MERC-PNG subtracts estimated use by interruptible and transportation customers from total throughput. As mentioned in MERC-PNG's *Initial Petition*, page 9, the Company states that it only has monthly billing cycle data for the majority of its interruptible and transportation customers. This fact creates an issue in that it requires the Company to estimate daily interruptible and transportation customer use before estimating firm sales. However, since these non-firm customers are less weather sensitive than firm customers, it is not unreasonable to assume, as MERC-PNG does, that these customers will consume roughly the same amount of gas each day. While reviewing MERC-PNG's calculation of average daily interruptible and transportation use, the OES observed that the Company bases its calculation on 20 days in the month, which indicates that MERC-PNG believes that these customers operate approximately five days a week. The OES would prefer a more precise estimate, but notes that MERC-PNG is in the process of obtaining data for a more precise estimate of peak-day use, as discussed below.

The OES conducted further peak-day analysis by comparing MERC-PNG's estimate of peak-day use by interruptible and transportation customers to total peak-day throughput estimates provided by the Company in its response to OES Information Request No. 2 (OES Attachment 1). Based on calculations made by the OES, it is possible, under certain circumstances, that the Company may not have sufficient capacity to serve firm customers on an all-time peak day. Specifically, the OES notes that there were two dates where estimated firm peak-day usage is greater than MERC-PNG's total entitlement level (OES Attachment 3). The differentials are relatively small and could be managed if such a circumstance arose. Thus, although the OES has concerns with MERC-PNG's results, the OES is confident that service would be reliable. Further, the OES does not believe that MERC-PNG is attempting to bias its estimate of interruptible and transportation use but, rather, is attempting to deal with an unknown quantity, interruptible and transportation customer use, in the best manner possible.

Further, the Company is attempting to mitigate the design-day risk associated with transportation customers by requiring gas meter telemetry. In its most recent general rate case, Docket No. G007,011/GR-08-835, MERC-PNG and MERC-NMU proposed a change in rate design requiring all transportation customers to install telemetry. In its June 29, 2009 *Order* in this rate

case, the Commission agreed with the Administrative Law Judge's finding, and the Company's proposal, that MERC-PNG be allowed to require telemetry for transportation customers, without exception. The OES supported MERC-PNG's proposal.

Based on the discussion above, the OES believes that MERC-PNG made a reasonable attempt to estimate its design-day and peak-day sendout. However, given the lack of daily data associated with MERC-PNG's interruptible and transportation customers, the OES recommends that the Commission not endorse this technique until such time that MERC-PNG has adequate daily interruptible and transportation throughput data. Further, the OES recommends that MERC-PNG provide the following in its *Reply Comments*:

- a full discussion detailing how it intends to install telemetry on 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;
- a full discussion explaining how it arrived at its interruptible and transportation customer usage estimates that it incorporates into its design-day analysis; and
- a full discussion of whether MERC-PNG is examining other techniques to improve its interruptible customer usage estimates.

#### **B. VOLUME RISK ADJUSTMENT**

In its initial *Petition*, MERC-PNG states that it adds a volume risk adjustment to its design day estimate. The volume risk adjustment's purpose, as stated by the Company, is "to provide a confidence level that the daily metered load under design conditions would not exceed the daily metered regression estimate." The confidence level MERC-PNG chose is 97.5 percent, which means that there is roughly a 2.5 percent chance that any given design day estimate will exceed the daily throughput estimate at a given point. In its response to discovery in the Viking PGA system demand entitlement filing,<sup>5</sup> MERC-PNG states that a 99.9 percent confidence level could have also been chosen, which means that there would be a roughly 0.1 percent chance that a given design day estimate would exceed throughput estimates. Procuring demand contracts to meet a 99.9 percent confidence level would essentially assure full system integrity under any circumstance, but would also involve additional costs over MERC-PNG's current 97.5 percent confidence level. Given this trade-off between reasonable cost and absolute reliability, the OES recommends that MERC-PNG provide the following in its *Reply Comments*:

- a full discussion explaining why it chose the 97.5 percent confidence level that it uses in its design day analysis; and

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<sup>5</sup> Docket No. G011/M-09-1285.

- a full analysis, including supporting calculations, comparing demand costs at the 97.5 confidence level and at the 99.9 percent confidence level.

## 2. *Demand Entitlement Level*

In its *Petition*, MERC-PNG requests the addition of 1,000 Mcf/day to its FT8466 contract for the 2009-2010 heating season. This addition would result in total capacity for this contract of 1,500 Mcf/day.

Given mild temperatures during recent heating seasons, the OES investigated the historical peak-day sendout per customer. OES Attachment 4 shows that the all-time peak-day sendout per customer was 1.6222 Mcf/customer during the 1998-1999 heating season.<sup>6</sup> The OES notes that peak-day sendout per customer was near to the all-time peak day sendout during the 2008-2009 heating season at 1.5913 Mcf/customer per day (OES Attachment 4).

As indicated in OES Attachment 5, MERC-PNG's proposed design-day requirement increased 1,000 Mcf/day (or approximately 9.52 percent) from 10,500 Mcf/day to 11,500 Mcf/day. This increase is less than the 14-year average change in the forecasted design-day number of customers of 5.11 percent, and the overall projected customer growth rate for the 2009-2010 heating season of 3.30 percent.

As indicated in OES Attachment 4, the firm peak-day sendout on its GLGT system for the 2008-2009 heating season was 9,779 Mcf/day, an increase of 4,714 Mcf/day (or approximately 93.11 percent) over the 2007-2008 heating season. As shown in OES Attachment 4, the peak-day sendout during the 2008-2009 heating season is the greatest firm throughput recorded on the Great Lakes system and represents a significant increase over the previous heating season. Given this information, the OES recommends that MERC-PNG provide, in its *Reply Comments*, a full discussion explaining the circumstances surrounding the peak-day sendout during the 2008-2009 heating season. The Company's proposed increase in design-day requirements results in an anticipated design-day use per customer of 1.7802 Mcf/day. The total entitlement per customer of 1.8952 Mcf/day is greater than the eight-year average peak-day sendout per peak-day customer of 1.3778 Mcf/day and the all-time peak day sendout per customer of 1.6222 Mcf/day.<sup>7</sup>

Since MERC-PNG's design-day forecast estimates are greater than the all-time peak-day sendout, there does not appear to be a concern about reliability at this time, beyond resolution of the amounts used by interruptible and transportation customers, as noted above. However, it is also important to ensure that the Company does not over-estimate its need unreasonably and

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<sup>6</sup> When design-day forecasts of other Minnesota regulated natural gas companies were examined, the 1995-1996 and 1993-1994 heating seasons were generally where historic peak-day throughputs occurred. However, MERC-PNG has information available only from the 1998-1999 heating season going forward.

<sup>7</sup> Please note that peak-day sendout per customer information is unavailable for the 2005-2006, 2006-2007, and 2007-2008 heating seasons.

cause PGA rates to be too high. The OES intends to continue working with the Company to refine the estimates of peak-day use per customer, and looks forward to reviewing the information MERC-PNG will provide in its *Reply Comments* related to its design-day calculations.

### 3. *Reserve Margin*

As shown in OES Attachment 4, the Company's entitlement proposal would result in a positive reserve margin for MERC-PNG's Great Lakes PGA system customers of 6.46 percent, which is a marked increase from the 2008-2009 reserve margin of 1.95 percent. This proposed increase in the reserve margin would bring the reserve margin over the five percent threshold that the OES considers to be an adequate reserve margin. However, given the design-day analysis issues discussed above, and the Great Lakes PGA system's lack of available storage and peak shaving, the OES believes that MERC-PNG's reserve margin is reasonable and adequate.

#### C. *MERC-PNG'S SPECIFIC PROPOSED DEMAND ENTITLEMENT CHANGES*

As MERC-PNG explains in its filing, there are two types of demand entitlement changes. The first type is design-day deliverability, which, in this filing, represents an increase of 1,000 Mcf/day of firm transportation capacity available to Great Lakes PGA customers during winter peak periods. The second type does not affect the design-day deliverability level, but does affect the demand costs recovered from ratepayers through the PGA. Changes in the second type of demand entitlement changes are made to non-winter transportation and balancing contracts and, in this filing, MERC-PNG does not propose any adjustments to these contracts types.

#### D. *MERC-PNG'S GREAT LAKES PGA SYSTEM COST RECOVERY PROPOSAL*

The demand entitlement changes proposed above represent the demand entitlements that firm customers on MERC-PNG's Great Lakes system would pay. The Company's *Petition* uses MERC-PNG's October 2009 PGA as a means of comparison for its entitlement level cost changes since MERC-PNG proposes that the rate change take effect on November 1, 2009. MERC-PNG's proposed changes would result in the following bill impacts:



Customer Class	Commodity Change (\$/Mcf)	Commodity Change (Percent)	Demand Change (\$/Mcf)	Demand Change (Percent)	Total Change (\$/Mcf)	Total Change (Percent)	Effect on Annual Bill (\$)
General Service	\$0.6994	19.07%	\$0.0481	6.04%	\$0.7475	12.27%	\$109.47
Small Vol. Interruptible	\$0.6994	19.07%	\$0.0000	0.00%	\$0.6994	14.24%	\$2,822.62
Small Vol. Firm	\$0.6994	19.07%	\$0.0000	0.00%	\$0.6994	14.10%	\$3,820.26

As shown above, and in MERC-PNG Attachment 4 in its *Initial Petition*, the Company's proposed entitlement levels would result in the following estimated annual bill impacts:

- an increase of approximately \$109.47, or 12.27 percent, for an average General Service customer consuming 146 Mcf annually;
- an increase of approximately \$2,822.62, or 14.24 percent, for an average Small Volume Interruptible customer consuming 4,036 Mcf annually; and
- an increase of approximately \$3,820.26, or 14.10 percent, for an average Small Volume Firm customer consuming 5,462 Mcf annually.

The OES's analysis is somewhat different from that shown in MERC-PNG's initial *Petition* for two reasons. First, the OES holds the weighted average cost of gas constant, to isolate the increases in total gas costs associated solely with the demand cost of gas. Second, while analyzing MERC-PNG's proposal, the OES observed that the Company incorrectly calculated the rate impact of Call Options in its cost recovery (OES Attachment 6). It appears that MERC-PNG inadvertently used firm sales, rather than total system sales, to calculate the per-unit cost. Total sales is the appropriate figure since all customers benefit from hedging.<sup>8</sup> The OES recommends that MERC-PNG correct this error in its monthly PGA filing as soon as possible and refund any, and all, over-recoveries associated with this error in its September 1, 2010 true-up filing. The OES calculates bill impacts as follows:

<sup>8</sup> MERC-PNG's spreadsheet refers to "total sales," so it appears that the Company inadvertently calculated the Call Option rate incorrectly. Moreover, the amount of this error is likely to be relatively small.

Customer Class	Commodity Change (\$/Mcf)	Commodity Change (Percent)	Demand Change (\$/Mcf)	Demand Change (Percent)	Total Change (\$/Mcf)	Total Change (Percent)	Effect on Annual Bill (\$)
General Service	\$0.0114	0.31%	\$0.0481	6.04%	\$0.0595	0.98%	\$8.69
Small Vol. Interruptible	\$0.0114	0.31%	\$0.0000	0.00%	\$0.0114	0.23%	\$46.01
Small Vol. Firm	\$0.0114	0.31%	\$0.0000	0.00%	\$0.0114	0.23%	\$62.27

Note: The change in commodity cost relates to the implementation of Call Option costs for the 2009-2010 heating season. The rate changes associated with interruptible customers is the result of these changes in Call Option costs.

As shown in Table 2 above, and in OES Attachment 7, the OES proposed entitlement levels result in the following estimated annual bill impacts:

- an increase of approximately \$8.69, or 0.98 percent, for an average General Service customer consuming 146 Mcf annually;
- an increase of approximately \$46.01, or 0.23 percent, for an average Small Volume Interruptible customer consuming 4,036 Mcf annually; and
- an increase of approximately \$62.27, or 0.23 percent, for an average Small Volume Firm customer consuming 5,462 Mcf annually.

### **III. THE OES'S RECOMMENDATIONS**

Based on its concerns associated with MERC-PNG's design-day calculations, the OES withholds recommendation in this proceeding until the Company provides additional information in its Reply Comments. Given these concerns, the OES recommends that MERC-PNG provide the following in its Reply Comments:

- a full discussion explaining why its heating degree day adjustment differs from the National Weather Service's calculation standard and what, if any, impact using the official wind chill calculation has on its design-day forecasts;
- a full discussion detailing how it intends to install telemetry on its transportation customers and an estimate of how long it will be before it has adequate daily data to more accurately estimate its firm design day;
- a full discussion explaining how the Company arrived at its interruptible and transportation customer usage estimates that it incorporates into its design-day analysis;
- a full discussion of whether MERC-PNG is examining other techniques to improve its interruptible customer usage estimates;

- a full discussion explaining why it chose the 97.5 percent confidence level that it uses in its design day analysis;
- a full analysis, including supporting calculations, comparing demand costs at the 97.5 percent confidence level and at the 99.9 percent confidence level in its volume risk adjustment; and
- a full discussion explaining the circumstances surrounding the peak day sendout during the 2008-2009 heating season.

The OES also recommends that MERC-PNG correct the calculation error in its monthly PGA filing related to its Call Option rates as soon as possible and refund any, and all, over-recoveries associated with this error in its September 1, 2010 true-up filing.

/ja

**State of Minnesota**  
**OFFICE OF ENERGY SECURITY**

**Utility Information Request**

Docket Number: G011/M-09-1283

Date of Request: December 3, 2009

Requested From: Minnesota Energy Resources Corporation

Response Due: December 14, 2009

Analyst Requesting Information: Adam Heinen

Type of Inquiry:     Financial                     Rate of Return             Rate Design  
                           Engineering                 Forecasting                 Conservation  
                           Cost of Service             CIP                             Other

*If you feel your responses are trade secret or privileged, please indicate this on your response.*

Request No.	
2	<p>Subject: Design-Day Regression Models</p> <p>Please provide the following related to MERC-PNG Great Lakes' design-day regression:</p> <ul style="list-style-type: none"><li>a) a copy of any, and all, regression outputs that were used by MERC-PNG Great Lakes to determine its design-day study;</li><li>b) any, and all, input, and raw, data used by MERC-PNG Great Lakes in its design-day analysis; and</li><li>c) any, and all, raw weather data, and calculations, used to determine MERC-PNG Great Lakes' weather input data.</li></ul> <p>If this information has already been provided in written testimony or in response to an earlier OES information request, please identify the specific testimony cite(s) or OES information request number(s).</p> <p><b><u>Response:</u></b></p> <ul style="list-style-type: none"><li>a) All data used in the MERC-PNG Great Lakes peak day regressions and the individual regression results are provided on separate tabs in the attached Excel spreadsheet "MERC09-1283-IR2a-PNG-GLGTpeakdayRegressions.xls"</li></ul>

Response by: Greg Walters

List sources of information: \_\_\_\_\_

Title: Manager

Department: Regulatory and Legislative Affairs

Telephone: 507-529-5100

b) The raw input data used in the regressions appears on the "Data" tab of the Excel file attached in the response to part (a) (some of this data is "lagged" to provide prior day values on the "Values" tab of that file). The attached Excel file "MERC09-1283-IR2b-Interruptible-TransportationConsumptionReportfor2010PeakDay 091509.xls" provides support for removing the 2,252 Dths of Interruptible, Transportation, and Joint Interruptible demand. The attached Excel file "MERC09-1283-IR2b-SmVolJointFirm Daily Firm Customers.xls" contains support for the 218 Dths of Daily Firm Capacity that was added back into the peak day requirements. The attached Excel file "MERC09-1283-IR2b-MERCFCST2009004\_June\_03\_09.xls" contains support for the -4% sales forecast change for general service customers from 2009 to 2010.

c) The attached Excel file "MERC09-1283-IR2c-Bemidji Weather Data.xls" contains the raw weather data and calculations used to determine MERC-PNG Great Lakes' weather input data for both the daily regression data and the design weather conditions.

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OES Attachment 1  
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Response by: Greg Walters

List sources of information:

Title: Manager

Department: Regulatory and Legislative Affairs

Telephone: 507-529-5100

**PNG-GLGT Bemidji Peak Day Regression for Winter 2010 - Summary**  
Based on December through February Data for 3 years

- 107 Coldest Bemidji AHDD65 in 20 years (Feb 1, 1996)
- 99 Coldest Bemidji HDDW65 in 20 years (Feb 1, 1996)
- 87 Bemidji HDD65-1 Day before coldest HDD65 in 20 years (Jan 31, 1996)
- 2.5% Risk Tolerance for Actual Load Exceeding Estimate

Regression	Baseload	Use Per AHDD65	Use Per HDDW65	Use Per HDD65-1	Adj R Sq.	Sigma	Point Est	Total Daily Meter Risk Adjustment	Total Daily Meter Peak Day Estimate
Last Year 3yr-S	498.72	108.37			0.882	556.37	12,159	1,089	13,247
Last Year 3yr-AHDD65	551.55	106.75			0.879	563.48	11,973	1,104	13,078
3yr-S	534.23		110.28	7.32	0.898	547.14	12,089	1,072	13,161
<b>3yr-S+AHDD65</b>	<b>697.15</b>	<b>107.44</b>			<b>0.894</b>	<b>558.44</b>	<b>12,193</b>	<b>1,095</b>	<b>13,288</b>
3yr-AHDD65	460.84	108.31			0.888	572.86	12,050	1,123	13,173
3yr-HDDW65	464.45		115.90		0.890	566.99	11,939	1,111	13,050
							11,939		13,050
							12,193		13,288
							12,068		13,168

3yr-HDD65  
Diff from 3yr-AHDD65  
Pct Diff

0.871  
(0.017)  
-2%

615.74  
42.88  
7%

Notes:  
Dec 2005 to Feb 2008, only statistically significant independent variables  
Dec 2005 to Feb 2008, only Adjusted HDD  
Dec 2006 to Feb 2009, SAS best statistically significant independent variables  
Dec 2006 to Feb 2009, AHDD65 plus Significant non-weather variables  
Dec 2006 to Feb 2009, only AHDD65  
Dec 2006 to Feb 2009, only GasDay HDDW65 (New Significant Weather Variabl

**State of Minnesota**  
**OFFICE OF ENERGY SECURITY**

Docket No. G011/M-09-1283  
OES Attachment 2  
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**Utility Information Request**

Docket Number: G011/M-09-1283

Date of Request: December 3, 2009

Requested From: Minnesota Energy Resources Corporation

Response Due: December 14, 2009

Analyst Requesting Information: Adam Heinen

Type of Inquiry:    .....Financial            .....Rate of Return            .....Rate Design  
                          .....Engineering            .....Forecasting            .....Conservation  
                          .....Cost of Service            .....CIP                        .....Other

*If you feel your responses are trade secret or privileged, please indicate this on your response.*

Request No.	
3	<p>Subject:            Design-Day Weather Data</p> <p>MERC-PNG Great Lakes uses adjusted heating degree days (AHDDs) as an input in its design-day study models. As discussed in the OES's June 17, 2009 <i>Response Comments</i> in Docket No. G011/M-08-1328, Commission Staff raised concerns about the appropriateness of using AHDDs in calculating the design-day. Given these concerns, please provide any, and all, evidence, including by not limited to statistical analysis, that fully supports MERC-PNG's use of AHDDs in its design-day calculations.</p> <p>If this information has already been provided in written testimony or in response to an earlier OES information request, please identify the specific testimony cite(s) or OES information request number(s).</p> <p><b>Response:</b> The Excel file attachment in the response to Information Request 2(a) shows the details of the regressions run using MERC-PNG Great Lakes adjusted heating degree days (AHDD) on the "3yr-AHDD65" tab. The "3yr-HDD65" tab contains the regression results using standard heating degree days (HDD). The standard error, or sigma, for the AHDD regression of 572.86 is 7% lower than the HDD regression sigma of 615.74, indicating that the AHDD variable provides a better fit than HDD. The AHDD regression also has a higher R-Squared value than the HDD regression (0.888 vs. 0.871). The attached Excel file "MERC09-1283-IR3-</p>

Response by: Greg Walters

List sources of information: \_\_\_\_\_

Title: Manager

Department: Regulatory and Legislative Affairs

Telephone: 507-529-5100

MERCpeakDayAHDD65vsHDD65sigmas20090930.xls” summarizes the same comparison for each MERC peak day forecast region, and shows that AHDD65 provides a better fit for all eight MERC regression areas, regardless of which goodness of fit measure is used.

Note: The above analysis is focused on directly comparing AHDD verses HDD to determine which variable better matches MERC customer demand. The final Design Day forecast “3yr-S+AHDD65” regression uses AHDD with additional significant variables.

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OES Attachment 2  
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Department: Regulatory and Legislative Affairs  
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List sources of information:  
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OES's Analysis of MERC-PNG's Great Lakes PGA System Design-Day Analysis												
SUMMARY OUTPUT												
Regression Statistics												
Multiple R	0.945883177											
R Square	0.894694985											
Adjusted R Squ	0.893511783											
Standard Error	558.4431089											
Observations	271											
ANOVA												
	df	SS	MS	F	Significance F							
Regression	3	707448912.7	235816304	756.163929	3.885E-130							
Residual	267	83266274.44	311858.706									
Total	270	790715187.2										
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%				
Intercept	697.1461	157.6530	4.4220	0.0000	386.7449093	1007.547383	386.7449093	1007.547383				
AHDD65	107.4408	2.3219	46.2733	0.0000	102.8692969	112.0123125	102.8692969	112.0123125				
Dec	(242.3637)	83.2065	(2.9128)	0.0039	-406.1881535	-78.53931222	-406.1881535	-78.53931222				
Feb	(320.7900)	83.8734	(3.8247)	0.0002	-485.9274885	-155.652561	-485.9274885	-155.652561				

  

PNG-GLGT Bemidji Peak Day Regression for Winter 2010												
											13,288	Peak Est.
											107.44	Use/AHDD65
(Mon=1) Bemidji											107	Max AHDD65

  

Date	Day	Daily Meter	AHDD65	Dec	Feb	Estimated Peak Day Usage	Estimated Interruptible Usage	Estimated Peak Day Firm Usage	MERC Total Entitlement Value	Difference Between Firm Use and Estimated Total Entitlement	0= Sufficient Capacity 1=Estimated Firm Use Greater than Total Entitlement
12/1/2006	5	6,363	58.3	1	0	11,351	2,252	9,099	11,500	(2,401)	0
12/2/2006	6	7,018	62.2	1	0	11,594	2,252	9,342	11,500	(2,158)	0
12/3/2006	7	6,895	66.5	1	0	11,005	2,252	8,753	11,500	(2,747)	0
12/4/2006	1	7,916	68.8	1	0	11,776	2,252	9,524	11,500	(1,976)	0
12/5/2006	2	6,240	57.7	1	0	11,292	2,252	9,040	11,500	(2,460)	0
12/6/2006	3	7,966	70.1	1	0	11,692	2,252	9,440	11,500	(2,060)	0
12/7/2006	4	7,208	67.4	1	0	11,219	2,252	8,967	11,500	(2,533)	0
12/8/2006	5	5,057	43.2	1	0	11,669	2,252	9,417	11,500	(2,083)	0
12/9/2006	6	4,522	30.5	1	0	12,504	2,252	10,252	11,500	(1,248)	0
12/10/2006	7	4,279	38.2	1	0	11,433	2,252	9,181	11,500	(2,319)	0
12/11/2006	1	4,131	34.2	1	0	11,706	2,252	9,454	11,500	(2,046)	0
12/12/2006	2	5,310	35.7	1	0	12,728	2,252	10,476	11,500	(1,024)	0
12/13/2006	3	4,806	35.2	1	0	12,278	2,252	10,026	11,500	(1,474)	0
12/14/2006	4	5,233	38.1	1	0	12,395	2,252	10,143	11,500	(1,357)	0
12/15/2006	5	5,439	41.8	1	0	12,202	2,252	9,950	11,500	(1,550)	0
12/16/2006	6	4,976	37.0	1	0	12,259	2,252	10,007	11,500	(1,493)	0
12/17/2006	7	5,713	47.2	1	0	11,901	2,252	9,649	11,500	(1,851)	0
12/18/2006	1	5,444	47.5	1	0	11,592	2,252	9,340	11,500	(2,160)	0
12/19/2006	2	4,565	37.1	1	0	11,837	2,252	9,585	11,500	(1,915)	0
12/20/2006	3	5,494	39.6	1	0	12,494	2,252	10,242	11,500	(1,258)	0
12/21/2006	4	4,746	46.4	1	0	11,020	2,252	8,768	11,500	(2,732)	0
12/22/2006	5	4,576	37.8	1	0	11,769	2,252	9,517	11,500	(1,983)	0
12/23/2006	6	4,748	40.0	1	0	11,708	2,252	9,456	11,500	(2,044)	0
12/24/2006	7	4,178	41.1	1	0	11,019	2,252	8,767	11,500	(2,733)	0
12/25/2006	1	4,949	48.2	1	0	11,030	2,252	8,778	11,500	(2,722)	0
12/26/2006	2	4,640	44.0	1	0	11,166	2,252	8,914	11,500	(2,586)	0
12/27/2006	3	4,539	39.5	1	0	11,547	2,252	9,295	11,500	(2,205)	0
12/28/2006	4	4,406	40.7	1	0	11,291	2,252	9,039	11,500	(2,461)	0
12/29/2006	5	4,600	37.8	1	0	11,793	2,252	9,541	11,500	(1,959)	0
12/30/2006	6	4,346	37.1	1	0	11,618	2,252	9,366	11,500	(2,134)	0
12/31/2006	7	6,138	42.9	1	0	12,778	2,252	10,526	11,500	(974)	0

1/1/2007	1	5,977	47.5	0	0	12,368	2,252	10,116	11,500	(1,384)	0
1/2/2007	2	5,449	42.5	0	0	12,378	2,252	10,126	11,500	(1,374)	0
1/3/2007	3	4,601	32.4	0	0	12,616	2,252	10,364	11,500	(1,136)	0
1/4/2007	4	4,355	26.5	0	0	13,004	2,252	10,752	11,500	(748)	0
1/5/2007	5	4,543	37.7	0	0	11,984	2,252	9,732	11,500	(1,768)	0
1/6/2007	6	4,679	40.7	0	0	11,802	2,252	9,550	11,500	(1,950)	0
1/7/2007	7	5,793	47.5	0	0	12,190	2,252	9,938	11,500	(1,562)	0
1/8/2007	1	6,072	50.9	0	0	12,102	2,252	9,850	11,500	(1,650)	0
1/9/2007	2	6,691	59.4	0	0	11,809	2,252	9,557	11,500	(1,943)	0
1/10/2007	3	5,549	53.8	0	0	11,269	2,252	9,017	11,500	(2,483)	0
1/11/2007	4	7,816	62.2	0	0	12,635	2,252	10,383	11,500	(1,117)	0
1/12/2007	5	9,186	77.8	0	0	12,328	2,252	10,076	11,500	(1,424)	0
1/13/2007	6	7,955	70.7	0	0	11,853	2,252	9,601	11,500	(1,899)	0
1/14/2007	7	8,053	70.6	0	0	11,962	2,252	9,710	11,500	(1,790)	0
1/15/2007	1	8,639	70.7	0	0	12,537	2,252	10,285	11,500	(1,215)	0
1/16/2007	2	7,598	67.8	0	0	11,805	2,252	9,553	11,500	(1,947)	0
1/17/2007	3	6,282	51.7	0	0	12,223	2,252	9,971	11,500	(1,529)	0
1/18/2007	4	6,594	52.8	0	0	12,417	2,252	10,165	11,500	(1,335)	0
1/19/2007	5	7,919	64.8	0	0	12,453	2,252	10,201	11,500	(1,299)	0
1/20/2007	6	5,917	56.6	0	0	11,331	2,252	9,079	11,500	(2,421)	0
1/21/2007	7	6,653	51.5	0	0	12,621	2,252	10,369	11,500	(1,131)	0
1/22/2007	1	6,444	48.4	0	0	12,740	2,252	10,488	11,500	(1,012)	0
1/23/2007	2	6,300	55.1	0	0	11,878	2,252	9,626	11,500	(1,874)	0
1/24/2007	3	6,795	54.0	0	0	12,489	2,252	10,237	11,500	(1,263)	0
1/25/2007	4	5,990	58.3	0	0	11,222	2,252	8,970	11,500	(2,530)	0
1/26/2007	5	5,439	42.9	0	0	12,322	2,252	10,070	11,500	(1,430)	0
1/27/2007	6	8,411	67.9	0	0	12,617	2,252	10,365	11,500	(1,135)	0
1/28/2007	7	7,505	73.1	0	0	11,143	2,252	8,891	11,500	(2,609)	0
1/29/2007	1	7,991	69.4	0	0	12,026	2,252	9,774	11,500	(1,726)	0
1/30/2007	2	7,653	71.9	0	0	11,420	2,252	9,168	11,500	(2,332)	0
1/31/2007	3	7,775	66.3	0	0	12,144	2,252	9,892	11,500	(1,608)	0
2/1/2007	4	8,684	75.2	0	1	11,779	2,252	9,527	11,500	(1,973)	0
2/2/2007	5	9,254	78.5	0	1	11,997	2,252	9,745	11,500	(1,755)	0
2/3/2007	6	10,369	92.7	0	1	11,590	2,252	9,338	11,500	(2,162)	0
2/4/2007	7	11,404	90.1	0	1	12,899	2,252	10,647	11,500	(853)	0
2/5/2007	1	10,581	83.8	0	1	12,750	2,252	10,498	11,500	(1,002)	0
2/6/2007	2	9,669	74.6	0	1	12,835	2,252	10,583	11,500	(917)	0
2/7/2007	3	9,381	82.1	0	1	11,731	2,252	9,479	11,500	(2,021)	0
2/8/2007	4	8,993	75.9	0	1	12,014	2,252	9,762	11,500	(1,738)	0
2/9/2007	5	9,511	82.1	0	1	11,861	2,252	9,609	11,500	(1,891)	0
2/10/2007	6	8,337	74.5	0	1	11,506	2,252	9,254	11,500	(2,246)	0
2/11/2007	7	7,402	62.5	0	1	11,858	2,252	9,606	11,500	(1,894)	0
2/12/2007	1	8,551	72.5	0	1	11,942	2,252	9,690	11,500	(1,810)	0
2/13/2007	2	8,837	74.9	0	1	11,967	2,252	9,715	11,500	(1,785)	0
2/14/2007	3	8,844	75.3	0	1	11,933	2,252	9,681	11,500	(1,819)	0
2/15/2007	4	7,523	68.0	0	1	11,388	2,252	9,136	11,500	(2,364)	0
2/16/2007	5	6,439	57.8	0	1	11,408	2,252	9,156	11,500	(2,344)	0
2/17/2007	6	6,882	62.7	0	1	11,321	2,252	9,069	11,500	(2,431)	0
2/18/2007	7	6,795	63.8	0	1	11,116	2,252	8,864	11,500	(2,636)	0
2/19/2007	1	5,442	48.8	0	1	11,370	2,252	9,118	11,500	(2,382)	0
2/20/2007	2	4,391	41.3	0	1	11,125	2,252	8,873	11,500	(2,627)	0
2/21/2007	3	5,909	44.5	0	1	12,308	2,252	10,056	11,500	(1,444)	0
2/22/2007	4	5,534	52.4	0	1	11,076	2,252	8,824	11,500	(2,676)	0
2/23/2007	5	5,903	51.3	0	1	11,567	2,252	9,315	11,500	(2,185)	0
2/24/2007	6	5,415	47.5	0	1	11,491	2,252	9,239	11,500	(2,261)	0
2/25/2007	7	4,839	42.8	0	1	11,416	2,252	9,164	11,500	(2,336)	0
2/26/2007	1	5,001	42.8	0	1	11,578	2,252	9,326	11,500	(2,174)	0
2/27/2007	2	4,898	42.6	0	1	11,492	2,252	9,240	11,500	(2,260)	0
2/28/2007	3	5,356	42.2	0	1	12,000	2,252	9,748	11,500	(1,752)	0

12/1/2007	6	6,263	55.1	1	0	11,599	2,252	9,347	11,500	(2,153)	0
12/2/2007	7	6,951	62.7	1	0	11,468	2,252	9,216	11,500	(2,284)	0
12/3/2007	1	7,323	65.1	1	0	11,582	2,252	9,330	11,500	(2,170)	0
12/4/2007	2	7,394	56.7	1	0	12,558	2,252	10,306	11,500	(1,194)	0
12/5/2007	3	8,039	68.0	1	0	11,989	2,252	9,737	11,500	(1,763)	0
12/6/2007	4	7,795	61.6	1	0	12,435	2,252	10,183	11,500	(1,317)	0
12/7/2007	5	8,649	73.0	1	0	12,056	2,252	9,804	11,500	(1,696)	0
12/8/2007	6	8,840	74.9	1	0	12,049	2,252	9,797	11,500	(1,703)	0
12/9/2007	7	8,944	72.8	1	0	12,376	2,252	10,124	11,500	(1,376)	0
12/10/2007	1	8,100	59.4	1	0	12,976	2,252	10,724	11,500	(776)	0
12/11/2007	2	8,183	63.7	1	0	12,591	2,252	10,339	11,500	(1,161)	0
12/12/2007	3	6,417	55.6	1	0	11,693	2,252	9,441	11,500	(2,059)	0
12/13/2007	4	8,459	61.5	1	0	13,107	2,252	10,855	11,500	(645)	0
12/14/2007	5	8,178	74.2	1	0	11,464	2,252	9,212	11,500	(2,288)	0
12/15/2007	6	6,495	56.2	1	0	11,713	2,252	9,461	11,500	(2,039)	0
12/16/2007	7	7,596	54.6	1	0	12,984	2,252	10,732	11,500	(768)	0
12/17/2007	1	6,706	47.4	1	0	12,869	2,252	10,617	11,500	(883)	0
12/18/2007	2	6,174	49.0	1	0	12,168	2,252	9,916	11,500	(1,584)	0
12/19/2007	3	5,741	54.1	1	0	11,187	2,252	8,935	11,500	(2,565)	0
12/20/2007	4	4,879	42.5	1	0	11,565	2,252	9,313	11,500	(2,187)	0
12/21/2007	5	4,699	39.2	1	0	11,739	2,252	9,487	11,500	(2,013)	0
12/22/2007	6	6,853	54.9	1	0	12,210	2,252	9,958	11,500	(1,542)	0
12/23/2007	7	6,693	66.1	1	0	10,843	2,252	8,591	11,500	(2,909)	0
12/24/2007	1	5,186	56.7	1	0	10,347	2,252	8,095	11,500	(3,405)	0
12/25/2007	2	5,224	44.5	1	0	11,695	2,252	9,443	11,500	(2,057)	0
12/26/2007	3	5,339	46.9	1	0	11,552	2,252	9,300	11,500	(2,200)	0
12/27/2007	4	5,792	46.9	1	0	12,005	2,252	9,753	11,500	(1,747)	0
12/28/2007	5	5,674	52.5	1	0	11,284	2,252	9,032	11,500	(2,468)	0
12/29/2007	6	5,351	47.9	1	0	11,454	2,252	9,202	11,500	(2,298)	0
12/30/2007	7	5,490	48.8	1	0	11,505	2,252	9,253	11,500	(2,247)	0
12/31/2007	1	6,911	62.7	1	0	11,428	2,252	9,176	11,500	(2,324)	0
1/1/2008	2	8,385	75.0	0	0	11,819	2,252	9,567	11,500	(1,933)	0
1/2/2008	3	7,239	70.4	0	0	11,177	2,252	8,925	11,500	(2,575)	0
1/3/2008	4	5,906	50.4	0	0	11,987	2,252	9,735	11,500	(1,765)	0
1/4/2008	5	5,470	51.4	0	0	11,448	2,252	9,196	11,500	(2,304)	0
1/5/2008	6	4,716	44.3	0	0	11,455	2,252	9,203	11,500	(2,297)	0
1/6/2008	7	3,987	35.3	0	0	11,689	2,252	9,437	11,500	(2,063)	0
1/7/2008	1	4,328	36.1	0	0	11,951	2,252	9,699	11,500	(1,801)	0
1/8/2008	2	5,128	44.3	0	0	11,867	2,252	9,615	11,500	(1,885)	0
1/9/2008	3	5,546	49.8	0	0	11,689	2,252	9,437	11,500	(2,063)	0
1/10/2008	4	5,318	44.1	0	0	12,076	2,252	9,824	11,500	(1,676)	0
1/11/2008	5	5,687	48.2	0	0	12,010	2,252	9,758	11,500	(1,742)	0
1/12/2008	6	6,219	57.8	0	0	11,510	2,252	9,258	11,500	(2,242)	0
1/13/2008	7	7,349	59.9	0	0	12,415	2,252	10,163	11,500	(1,337)	0
1/14/2008	1	8,674	75.3	0	0	12,084	2,252	9,832	11,500	(1,668)	0
1/15/2008	2	7,010	68.2	0	0	11,179	2,252	8,927	11,500	(2,573)	0
1/16/2008	3	8,741	63.3	0	0	13,439	2,252	11,187	11,500	(313)	0
1/17/2008	4	8,104	69.3	0	0	12,155	2,252	9,903	11,500	(1,597)	0
1/18/2008	5	10,229	82.8	0	0	12,829	2,252	10,577	11,500	(923)	0
1/19/2008	6	10,231	85.0	0	0	12,593	2,252	10,341	11,500	(1,159)	0
1/20/2008	7	10,371	82.7	0	0	12,984	2,252	10,732	11,500	(768)	0
1/21/2008	1	9,838	73.1	0	0	13,476	2,252	11,224	11,500	(276)	0
1/22/2008	2	9,605	77.3	0	0	12,798	2,252	10,546	11,500	(954)	0
1/23/2008	3	10,105	83.5	0	0	12,634	2,252	10,382	11,500	(1,118)	0
1/24/2008	4	8,342	70.4	0	0	12,280	2,252	10,028	11,500	(1,472)	0
1/25/2008	5	7,151	63.0	0	0	11,878	2,252	9,626	11,500	(1,874)	0
1/26/2008	6	7,153	49.8	0	0	13,296	2,252	11,044	11,500	(456)	0
1/27/2008	7	5,897	48.9	0	0	12,141	2,252	9,889	11,500	(1,611)	0
1/28/2008	1	6,414	38.5	0	0	13,772	2,252	11,520	11,500	20	1
1/29/2008	2	11,070	81.2	0	0	13,844	2,252	11,592	11,500	92	1
1/30/2008	3	10,529	91.8	0	0	12,158	2,252	9,906	11,500	(1,594)	0
1/31/2008	4	8,464	73.4	0	0	12,070	2,252	9,818	11,500	(1,682)	0

2/1/2008	5	6,070	55.0	0	1	11,336	2,252	9,084	11,500	(2,416)	0
2/2/2008	6	5,903	49.4	0	1	11,776	2,252	9,524	11,500	(1,976)	0
2/3/2008	7	5,595	48.2	0	1	11,597	2,252	9,345	11,500	(2,155)	0
2/4/2008	1	5,257	42.4	0	1	11,877	2,252	9,625	11,500	(1,875)	0
2/5/2008	2	7,040	59.4	0	1	11,838	2,252	9,586	11,500	(1,914)	0
2/6/2008	3	7,048	62.2	0	1	11,538	2,252	9,286	11,500	(2,214)	0
2/7/2008	4	5,744	47.8	0	1	11,779	2,252	9,527	11,500	(1,973)	0
2/8/2008	5	5,479	47.4	0	1	11,564	2,252	9,312	11,500	(2,188)	0
2/9/2008	6	9,532	75.0	0	1	12,653	2,252	10,401	11,500	(1,099)	0
2/10/2008	7	10,571	96.6	0	1	11,368	2,252	9,116	11,500	(2,384)	0
2/11/2008	1	8,907	80.9	0	1	11,396	2,252	9,144	11,500	(2,356)	0
2/12/2008	2	7,487	60.5	0	1	12,164	2,252	9,912	11,500	(1,588)	0
2/13/2008	3	8,215	66.2	0	1	12,283	2,252	10,031	11,500	(1,469)	0
2/14/2008	4	9,086	77.8	0	1	11,907	2,252	9,655	11,500	(1,845)	0
2/15/2008	5	8,257	79.8	0	1	10,859	2,252	8,607	11,500	(2,893)	0
2/16/2008	6	5,193	52.3	0	1	10,747	2,252	8,495	11,500	(3,005)	0
2/17/2008	7	6,748	56.5	0	1	11,853	2,252	9,601	11,500	(1,899)	0
2/18/2008	1	8,482	78.0	0	1	11,280	2,252	9,028	11,500	(2,472)	0
2/19/2008	2	9,754	84.2	0	1	11,879	2,252	9,627	11,500	(1,873)	0
2/20/2008	3	9,181	81.4	0	1	11,594	2,252	9,342	11,500	(2,158)	0
2/21/2008	4	7,005	72.1	0	1	10,436	2,252	8,184	11,500	(3,316)	0
2/22/2008	5	6,358	56.6	0	1	11,457	2,252	9,205	11,500	(2,295)	0
2/23/2008	6	5,174	52.0	0	1	10,760	2,252	8,508	11,500	(2,992)	0
2/24/2008	7	4,561	43.7	0	1	11,043	2,252	8,791	11,500	(2,709)	0
2/25/2008	1	5,703	49.1	0	1	11,608	2,252	9,356	11,500	(2,144)	0
2/26/2008	2	6,211	53.3	0	1	11,662	2,252	9,410	11,500	(2,090)	0
2/27/2008	3	6,291	56.7	0	1	11,373	2,252	9,121	11,500	(2,379)	0
2/28/2008	4	5,506	54.1	0	1	10,873	2,252	8,621	11,500	(2,879)	0
2/29/2008	5	6,457	55.7	0	1	11,650	2,252	9,398	11,500	(2,102)	0
12/1/2008	1	5,478	52.9	1	0	11,046	2,252	8,794	11,500	(2,706)	0
12/2/2008	2	5,296	49.5	1	0	11,237	2,252	8,985	11,500	(2,515)	0
12/3/2008	3	6,649	60.5	1	0	11,403	2,252	9,151	11,500	(2,349)	0
12/4/2008	4	6,723	61.0	1	0	11,419	2,252	9,167	11,500	(2,333)	0
12/5/2008	5	6,819	59.4	1	0	11,495	2,252	9,243	11,500	(2,257)	0
12/6/2008	6	7,897	71.7	1	0	11,448	2,252	9,196	11,500	(2,304)	0
12/7/2008	7	8,135	62.1	1	0	12,721	2,252	10,469	11,500	(1,031)	0
12/8/2008	1	7,801	63.6	1	0	12,222	2,252	9,970	11,500	(1,530)	0
12/9/2008	2	7,743	64.1	1	0	12,115	2,252	9,863	11,500	(1,637)	0
12/10/2008	3	7,164	61.6	1	0	11,804	2,252	9,552	11,500	(1,948)	0
12/11/2008	4	8,829	76.0	1	0	11,721	2,252	9,469	11,500	(2,031)	0
12/12/2008	5	7,066	61.0	1	0	11,767	2,252	9,515	11,500	(1,985)	0
12/13/2008	6	6,748	62.2	1	0	11,324	2,252	9,072	11,500	(2,428)	0
12/14/2008	7	9,230	85.4	1	0	11,307	2,252	9,055	11,500	(2,445)	0
12/15/2008	1	10,094	89.4	1	0	11,745	2,252	9,493	11,500	(2,007)	0
12/16/2008	2	9,234	80.9	1	0	11,801	2,252	9,549	11,500	(1,951)	0
12/17/2008	3	8,625	74.2	1	0	11,911	2,252	9,659	11,500	(1,841)	0
12/18/2008	4	8,291	75.6	1	0	11,422	2,252	9,170	11,500	(2,330)	0
12/19/2008	5	7,302	61.6	1	0	11,942	2,252	9,690	11,500	(1,810)	0
12/20/2008	6	8,126	71.7	1	0	11,678	2,252	9,426	11,500	(2,074)	0
12/21/2008	7	9,027	82.1	1	0	11,456	2,252	9,204	11,500	(2,296)	0
12/22/2008	1	8,348	77.8	1	0	11,247	2,252	8,995	11,500	(2,505)	0
12/23/2008	2	7,504	67.3	1	0	11,525	2,252	9,273	11,500	(2,227)	0
12/24/2008	3	7,339	74.9	1	0	10,548	2,252	8,296	11,500	(3,204)	0
12/25/2008	4	5,751	63.2	1	0	10,212	2,252	7,960	11,500	(3,540)	0
12/26/2008	5	4,886	40.3	1	0	11,812	2,252	9,560	11,500	(1,940)	0
12/27/2008	6	6,759	64.7	1	0	11,066	2,252	8,814	11,500	(2,686)	0
12/28/2008	7	6,488	62.6	1	0	11,012	2,252	8,760	11,500	(2,740)	0
12/29/2008	1	7,303	63.7	1	0	11,711	2,252	9,459	11,500	(2,041)	0
12/30/2008	2	8,831	81.3	1	0	11,348	2,252	9,096	11,500	(2,404)	0
12/31/2008	3	8,104	75.2	1	0	11,277	2,252	9,025	11,500	(2,475)	0

1/1/2009	4	7,806	68.9	0	0	11,896	2,252	9,644	11,500	(1,856)	0
1/2/2009	5	7,684	71.3	0	0	11,522	2,252	9,270	11,500	(2,230)	0
1/3/2009	6	7,020	69.3	0	0	11,071	2,252	8,819	11,500	(2,681)	0
1/4/2009	7	9,952	87.7	0	0	12,021	2,252	9,769	11,500	(1,731)	0
1/5/2009	1	9,037	77.7	0	0	12,185	2,252	9,933	11,500	(1,567)	0
1/6/2009	2	7,691	61.5	0	0	12,582	2,252	10,330	11,500	(1,170)	0
1/7/2009	3	7,932	69.1	0	0	12,002	2,252	9,750	11,500	(1,750)	0
1/8/2009	4	7,834	68.3	0	0	11,988	2,252	9,736	11,500	(1,764)	0
1/9/2009	5	7,890	67.3	0	0	12,153	2,252	9,901	11,500	(1,599)	0
1/10/2009	6	6,882	63.0	0	0	11,609	2,252	9,357	11,500	(2,143)	0
1/11/2009	7	7,815	62.4	0	0	12,607	2,252	10,355	11,500	(1,145)	0
1/12/2009	1	9,953	87.2	0	0	12,080	2,252	9,828	11,500	(1,672)	0
1/13/2009	2	10,393	88.4	0	0	12,391	2,252	10,139	11,500	(1,361)	0
1/14/2009	3	11,491	92.4	0	0	13,060	2,252	10,808	11,500	(692)	0
1/15/2009	4	11,054	87.2	0	0	13,187	2,252	10,935	11,500	(565)	0
1/16/2009	5	9,183	80.3	0	0	12,052	2,252	9,800	11,500	(1,700)	0
1/17/2009	6	7,654	55.0	0	0	13,241	2,252	10,989	11,500	(511)	0
1/18/2009	7	7,717	58.3	0	0	12,949	2,252	10,697	11,500	(803)	0
1/19/2009	1	7,845	62.1	0	0	12,673	2,252	10,421	11,500	(1,079)	0
1/20/2009	2	6,272	50.3	0	0	12,365	2,252	10,113	11,500	(1,387)	0
1/21/2009	3	5,707	46.4	0	0	12,223	2,252	9,971	11,500	(1,529)	0
1/22/2009	4	6,247	60.0	0	0	11,302	2,252	9,050	11,500	(2,450)	0
1/23/2009	5	9,021	85.1	0	0	11,372	2,252	9,120	11,500	(2,380)	0
1/24/2009	6	9,278	84.4	0	0	11,710	2,252	9,458	11,500	(2,042)	0
1/25/2009	7	9,479	83.2	0	0	12,040	2,252	9,788	11,500	(1,712)	0
1/26/2009	1	10,341	78.8	0	0	13,376	2,252	11,124	11,500	(376)	0
1/27/2009	2	8,379	72.1	0	0	12,131	2,252	9,879	11,500	(1,621)	0
1/28/2009	3	7,533	65.4	0	0	12,003	2,252	9,751	11,500	(1,749)	0
1/29/2009	4	8,693	80.3	0	0	11,567	2,252	9,315	11,500	(2,185)	0
1/30/2009	5	6,822	62.5	0	0	11,599	2,252	9,347	11,500	(2,153)	0
1/31/2009	6	5,422	39.9	0	0	12,628	2,252	10,376	11,500	(1,124)	0
2/1/2009	7	6,821	66.1	0	1	10,892	2,252	8,640	11,500	(2,860)	0
2/2/2009	1	9,083	83.2	0	1	11,324	2,252	9,072	11,500	(2,428)	0
2/3/2009	2	9,093	76.5	0	1	12,049	2,252	9,797	11,500	(1,703)	0
2/4/2009	3	7,901	71.5	0	1	11,394	2,252	9,142	11,500	(2,358)	0
2/5/2009	4	5,918	49.4	0	1	11,782	2,252	9,530	11,500	(1,970)	0
2/6/2009	5	4,605	37.5	0	1	11,757	2,252	9,505	11,500	(1,995)	0
2/7/2009	6	5,205	48.6	0	1	11,159	2,252	8,907	11,500	(2,593)	0
2/8/2009	7	4,338	37.8	0	1	11,452	2,252	9,200	11,500	(2,300)	0
2/9/2009	1	4,245	33.9	0	1	11,778	2,252	9,526	11,500	(1,974)	0
2/10/2009	2	4,024	34.1	0	1	11,536	2,252	9,284	11,500	(2,216)	0
2/11/2009	3	4,468	41.4	0	1	11,191	2,252	8,939	11,500	(2,561)	0
2/12/2009	4	5,395	53.9	0	1	10,779	2,252	8,527	11,500	(2,973)	0
2/13/2009	5	5,947	58.3	0	1	10,856	2,252	8,604	11,500	(2,896)	0
2/14/2009	6	6,952	66.6	0	1	10,976	2,252	8,724	11,500	(2,776)	0
2/15/2009	7	6,915	60.9	0	1	11,547	2,252	9,295	11,500	(2,205)	0
2/16/2009	1	6,026	47.3	0	1	12,125	2,252	9,873	11,500	(1,627)	0
2/17/2009	2	6,473	56.7	0	1	11,555	2,252	9,303	11,500	(2,197)	0
2/18/2009	3	8,326	72.4	0	1	11,727	2,252	9,475	11,500	(2,025)	0
2/19/2009	4	7,759	63.9	0	1	12,073	2,252	9,821	11,500	(1,679)	0
2/20/2009	5	7,080	58.3	0	1	11,992	2,252	9,740	11,500	(1,760)	0
2/21/2009	6	6,813	64.9	0	1	11,015	2,252	8,763	11,500	(2,737)	0
2/22/2009	7	6,889	64.5	0	1	11,137	2,252	8,885	11,500	(2,615)	0
2/23/2009	1	6,168	60.5	0	1	10,843	2,252	8,591	11,500	(2,909)	0
2/24/2009	2	4,471	43.9	0	1	10,933	2,252	8,681	11,500	(2,819)	0
2/25/2009	3	6,357	64.3	0	1	10,623	2,252	8,371	11,500	(3,129)	0
2/26/2009	4	7,947	74.8	0	1	11,086	2,252	8,834	11,500	(2,666)	0
2/27/2009	5	8,430	73.4	0	1	11,715	2,252	9,463	11,500	(2,037)	0
2/28/2009	6	8,232	77.0	0	1	11,134	2,252	8,882	11,500	(2,618)	0

**Minnesota Office of Energy Security Attachment 4  
MERC-PNG's Great Lakes Purchased Gas Adjustment Area Demand Entitlement Analysis  
Docket No. G011/M-09-1283**

Heating Season *	Number of Firm Customers			Design Day Requirement			Total Entitlement + Peak Shaving			Reserve Margin (10)
	(1) Number of DD Customers	(2) Change From Previous Year	(3) % Change From Previous Year	(4) Design Day (Mcf)	(5) Change From Previous Year	(6) % Change From Previous Year	(7) Total Entitlement (Mcf)	(8) Change From Previous Year	(9) % Change From Previous Year	
2009-2010	6,068	194	3.30%	10,802	503	4.86%	11,500	1,000	9.52%	6.46%
2008-2009	5,874	58	1.00%	10,299	749	7.84%	10,500	500	5.00%	1.95%
2007-2008#	5,816	69	1.20%	9,550	7	0.07%	10,000	314	3.24%	4.71%
2006-2007	5,747	68	1.20%	9,543	33	0.35%	9,686	0	0.00%	1.50%
2005-2006	5,679	165	2.99%	9,510	61	0.65%	9,686	0	0.00%	1.85%
2004-2005	5,514	103	1.90%	9,449	(198)	-2.05%	9,686	0	0.00%	2.51%
2003-2004	5,411	133	2.52%	9,647	1,659	20.77%	9,686	1,186	13.95%	0.40%
2002-2003	5,278	172	3.37%	7,988	(123)	-1.52%	8,500	0	0.00%	6.41%
2001-2002	5,106	134	2.70%	8,111	(254)	-3.04%	8,500	0	0.00%	4.80%
2000-2001	4,972	175	3.55%	8,365	92	1.11%	8,500	0	0.00%	1.61%
1999-2000**	4,797	341	7.65%	8,273	588	7.65%	8,500	2,422	39.85%	2.74%
1998-1999	4,456	241	5.72%	7,685	416	5.72%	6,078	0	0.00%	-20.91%
1997-1998	4,215	386	10.08%	7,289	665	10.07%	6,078	0	0.00%	-16.38%
1996-1997	3,829	336	9.62%	6,604	579	9.61%	6,078	0	0.00%	-7.96%
1995-1996	3,493			6,025			6,078			
Average Change Per Year:			4.12%			4.44%			5.11%	-0.74%

Per Peoples, the 2001-02 Design Day declined due to a downward trend in consumption and heat factor possibly due to high gas costs in 2000-01 and more energy efficient housing.

Heating Season *	Firm Peak Day Sendout			Excess per Customer			Peak Day Sendout per Customer			Peak Day Sendout per DD Customer (12)/(11)
	(11) Number of Peak Day Customers	(12) Firm Peak Day Sendout (Mcf)	(13) Sendout Change from Previous Year	(14) % Change From Previous Year	(15) Excess per Customer [(7)-(4)]/(1)	(16) Design Day per Customer (4)/(1)	(17) Entitlement per Customer (7)/(1)	(18) Peak Day Sendout per PD Customer (12)/(11)	(19) Peak Day Sendout per DD Customer (12)/(11)	
2009-2010	unknown	unknown			0.1150	1,7802	1,8952	unknown	unknown	
2008-2009 <sup>A</sup>	6,144	9,777	4,714	93.11%	0.0342	1,7533	1,7875	1,5913	1,6645	
2007-2008	unknown	5,063	(1,709)	-25.24%	0.0774	1,6420	1,7194	unknown	0.8705	
2006-2007	unknown	6,772	(959)	-12.40%	0.0249	1,6605	1,6854	unknown	1,1784	
2005-2006 ***	unknown	7,731	1,608	26.26%	0.0310	1,6746	1,7056	unknown	1,3613	
2004-2005	5,714	6,123	(1,543)	-20.13%	0.0430	1,7136	1,7566	1,0716	1,1104	
2003-2004	5,529	7,666	567	7.99%	0.0072	1,7628	1,7901	1,3865	1,4167	
2002-2003	5,411	7,099	1,104	18.42%	0.0970	1,5135	1,6105	1,3120	1,3450	
2001-2002	5,099	5,995	(567)	-8.64%	0.0762	1,5885	1,6847	1,1757	1,1741	
2000-2001	4,970	6,562	(576)	-8.07%	0.0272	1,6824	1,7096	1,3203	1,3198	
1999-2000	4,627	7,138	(368)	-4.90%	0.0473	1,7246	1,7719	1,5427	1,4880	
1998-1999	4,627	7,506	1,567	26.38%	-0.3606	1,7246	1,3640	1,6222	1,6845	
1997-1998	unknown	5,939	588	10.99%	-0.2826	1,7246	1,4420	unknown	1,4090	
1996-1997	unknown	5,351	427	8.67%	-0.1374	1,7247	1,5874	unknown	1,3975	
1995-1996	unknown	4,924			0.0152	1,7249	1,7401	unknown	1,4097	
Average Change Per Year:				1.61%	-0.0257	1,6832	1,6820	1,3778	1,3204	

# - The analysis conducted by the OES does not include the 423 Mcf/day capacity related to MERC's FT0011 agreement. This decision to omit these volumes is discussed in the body of the Comments in Docket No. G011/M-07-1404.

\*Per Peoples, information prior to 1995 is not available.

\*\*Corrected from peak day to design day number of customers.

\*\*\* The Company has not provided the number of peak-day customers beginning from the 2005-2006 heating season.

^ The number of peak day customers is calculated using the Residential and Commercial customer count data provided in MERC's Attachment 11.

Minnesota Office of Energy Security Attachment 5  
 MERC-PNG's Great Lakes Purchased Gas Adjustment Area Demand Entitlements Historical and Current Proposal  
 Docket No. G011/M-09-1283

2006-07 G011/M-06-1537 T-17 **	2007-08 G011/M-07-1404 T-17	2008-09 G011/M-08-1330 T-17	2009-10 G011/M-09-1283 T-17	Change in Quantity
Quantity (Mcf)	Quantity (Mcf)	Quantity (Mcf)	Quantity (Mcf)	Quantity (Mcf)
3,791	4,105	4,105	4,105	4,105
FT-075 Res fee	FT-075 Res fee	FT-075 Res fee	FT-075 Res fee	FT-075 Res fee
1,973	1,973	1,973	1,973	1,973
FT-155 (12)	FT-155 (12)	FT-155 (12)	FT-155 (12)	FT-155 (12)
2,422	2,422	2,422	2,422	2,422
FT-155 (5)	FT-155 (5)	FT-155 (5)	FT-155 (5)	FT-155 (5)
1,500	1,500	1,500	1,500	1,500
FT0011 **	FT0011 **	FT0011 **	FT0011 **	FT0011 **
0	0	0	0	0
FT8466 ***	FT8466 ***	FT8466 ***	FT8466 ***	FT8466 ***
0	0	500	1,500	1,500
Total Design Day Capacity	Total Design Day Capacity	Total Design Day Capacity	Total Design Day Capacity	Total Design Day Capacity
0	10,000	10,500	11,500	11,500
Total GL Transportation	Total GL Transportation	Total GL Transportation	Total GL Transportation	Total GL Transportation
0	10,000	10,500	11,500	11,500
Total Transportation	Total Transportation	Total Transportation	Total Transportation	Total Transportation
0	10,000	10,500	11,500	11,500
Total Seasonal Transport	Total Seasonal Transport	Total Seasonal Transport	Total Seasonal Transport	Total Seasonal Transport
0	1,500	1,500	1,500	1,500
Percent Seasonal on GL	Percent Seasonal on GL	Percent Seasonal on GL	Percent Seasonal on GL	Percent Seasonal on GL
0.0%	15.0%	14.3%	13.0%	13.0%

\* These values do not include Contracted Demand (CD).

\*\* MERC includes this contract in its analysis, while the OES omits its volumes for reasons explained in the body of Comments in Docket No G011/M-07-1404.

Minnesota Office of Energy Security Attachment 6  
MERC-PNG's Great Lakes PGA Demand Entitlements Rate Impacts as Revised by the OES  
Docket No. G011/M-09-1283

MERC-PNG Great Lakes Purchased Gas Adjustment System Current Cost of Gas Effective October 1, 2009

Annual Sales--As filed in Docket No. G007,011/MR-08-836  
Total Great Lakes Sales

10,663,940

MERC-PNG's Current Cost of Gas Effective October 1, 2009

GS-5	Season	Monthly Entitlement (Mcf)	Months	Rate (\$/Mcf)	Contract Costs	GS-5 Sales (therms)	Rate (\$/therm)
T-17 Demand	Annual	4,106	12	\$3.4580	\$170,341.08	8,626,910	\$0.01975
FT-075-RES FEE	Annual	1,973	12	\$3.4580	\$81,871.61	8,626,910	\$0.00949
FT-155 (12)	Annual	2,422	12	\$3.4580	\$100,503.31	8,626,910	\$0.01165
FT-155 (5)	Winter	1,500	5	\$3.4580	\$25,935.00	8,626,910	\$0.00301
FT	Winter	500	12	\$3.4580	\$20,748.00	8,626,910	\$0.00241
Exchange	Annual	162,508	1	\$1.7700	\$287,639.16	8,626,910	\$0.03334
<b>GS-5 Current Demand Cost of Gas/therm</b>							<b>\$0.07964</b>
<b>Current Commodity Cost of Gas/therm</b>							<b>\$0.36667</b>
<b>GS-5 Current Total Cost of Gas/therm</b>							<b>\$0.44631</b>
<b>GS-5, SVI-5, SJ-5 and LJ-5 Commodity</b>							
<b>Current Commodity Cost of Gas/therm</b>							<b>\$0.36667</b>
<b>Call Option Premium</b>							<b>\$0.00000</b>
<b>GS-5, SVI-5, SJ-5 and LJ-5 Commodity Current Cost of Gas/therm</b>							<b>\$0.36667</b>
<b>SJ-5 Current T-17 Demand Cost of Gas/therm</b>							<b>\$0.34580</b>
<b>Current Commodity Cost of Gas/therm</b>							<b>\$0.36667</b>
<b>LJ-5 Current T-17 Demand Cost of Gas/therm</b>							<b>\$0.34580</b>
<b>Current Commodity Cost of Gas/therm</b>							<b>\$0.36667</b>



MERC-PNG Great Lakes Purchased Gas Adjustment System Current Cost of Gas Effective October 1, 2009 with November Entitlements							
Annual Sales--As filed in Docket No. G007,011/MR-08-836	Season	Monthly Entitlement (Mcf)	Months	Rate (\$/Mcf)	Contract Costs	GS-5 Sales (therms)	Rate (\$/therm)
Total Great Lakes Sales						10,663,940	
<b>MERC-PNG's Current Cost of Gas Effective October 1, 2009</b>							
<b>GS-5</b>	T-17 Demand Annual	4,105	12	\$3.4580	\$170,341.08	8,626,910	\$0.01975
	FT-075-RE Annual	1,973	12	\$3.4580	\$81,871.61	8,626,910	\$0.00949
	FT-155 (12 Annual)	2,422	12	\$3.4580	\$100,503.31	8,626,910	\$0.01165
	FT-155 (5) Winter	1,500	5	\$3.4580	\$25,935.00	8,626,910	\$0.00301
	FT Winter	1,500	12	\$3.4580	\$62,244.00	8,626,910	\$0.00722
	Exchange Annual	162,508	1	\$1.7700	\$287,639.16	8,626,910	\$0.03334
	<b>GS-5 Current Demand Cost of Gas/therm</b>				\$728,534.16	8,626,910	<b>\$0.08445</b>
	<b>Current Commodity Cost of Gas/therm</b>						<b>\$0.36781</b>
	<b>GS-5 Current Total Cost of Gas/therm</b>						<b>\$0.45226</b>
<b>GS-5, SVI-5, SJ-5 and LJ-5 Commodity</b>							
	<b>Current Commodity Cost of Gas/therm</b>						\$0.36667
	<b>Call Option Premium</b>				\$12,126.92	10,663,940	\$0.00114
<b>GS-5, SVI-5, SJ-5 and LJ-5 Commodity Current Cost of Gas/therm</b>							<b>\$0.36781</b>
<b>SJ-5</b>	<b>Current T-17 Demand Cost of Gas/therm</b>						<b>\$0.34580</b>
	<b>Current Commodity Cost of Gas/therm</b>						<b>\$0.36781</b>
<b>LJ-5</b>	<b>Current T-17 Demand Cost of Gas/therm</b>						<b>\$0.34580</b>
	<b>Current Commodity Cost of Gas/therm</b>						<b>\$0.36781</b>

Note: Italicized Lines above indicate a contract that has changed since the October PGA filing.  
Note: The OES holds the Commodity Cost of Gas constant to isolate the effect of demand changes on rates. However, there is a slight change in commodity costs above, which is the result of call option premiums.

Minnesota Office of Energy Security Attachment 7  
MERC-PNG's Great Lakes PGA Demand Entitlements Rate Impacts as Revised by the OES  
Docket No. G011/M-09-1283

MERC-PNG GREAT LAKES SYSTEM								
RATE IMPACT OF THE PROPOSED DEMAND CHANGE -- MODIFIED BY THE OES								
November 1, 2009								
All costs in \$/MMBtu	Last Rate Case	Last Demand Change	Most Recent PGA	Oct-09 PGA with Current Demand Entitlement Change	Result of Proposed Change			
	G007,011 GR-08-835	G011/M-09-1330 Nov. 09	Oct. 09		Change from Last Rate Case	Change from Last Demand Change	Change from Last PGA	Change from Last PGA \$
<b>1) General Service: Avg. Annual Use:</b>			<b>146</b>	<b>Mcf</b>				
Commodity Cost	\$8.3290	\$6.9436	\$3.6667	\$3.6781	-55.84%	-47.03%	0.31%	\$0.0114
Demand Cost	\$0.8348	\$0.7995	\$0.7964	\$0.8445	1.16%	5.63%	6.04%	\$0.0481
Commodity Margin	\$1.6263	\$1.6263	\$1.6263	\$1.6263	0.00%	0.00%	0.00%	\$0.0000
Total Cost of Gas	\$10.7901	\$9.3694	\$6.0894	\$6.1489	-43.01%	-34.37%	0.98%	\$0.0595
Avg Annual Cost	\$1,575.35	\$1,367.93	\$889.05	\$897.74	-43.01%	-34.37%	0.98%	\$8.69
Effect of proposed commodity change on average annual bills:								\$0.00
Effect of proposed demand change on average annual bills:								\$8.69
<b>2) Small Vol. Interruptible: Avg. Annual Use:</b>			<b>4,036</b>	<b>Mcf</b>				
Commodity Cost	\$8.3290	\$6.9436	\$3.6667	\$3.6781	-55.84%	-47.03%	0.31%	\$0.0114
Demand Cost								
Commodity Margin	\$1.2434	\$0.9000	\$1.2434	\$1.2434	0.00%	38.16%	0.00%	\$0.0000
Total Cost of Gas	\$9.5724	\$7.8436	\$4.9101	\$4.9215	-48.59%	-37.25%	0.23%	\$0.0114
Avg Annual Cost	\$38,634.21	\$31,656.77	\$19,817.16	\$19,863.17	-48.59%	-37.25%	0.23%	\$46.01
Effect of proposed commodity change on average annual bills:								\$0.00
Effect of proposed demand change on average annual bills:								\$46.01
<b>3) Small Vol. Firm: Avg. Annual Use:</b>			<b>5,462</b>	<b>Mcf</b>				
<b>Avg. Annual CD units:</b>			<b>50</b>					
Commodity Cost	\$8.3290	\$6.9436	\$3.6667	\$3.6781	-55.84%	-47.03%	0.31%	\$0.0114
Demand Cost	\$3.4580	\$3.4580	\$3.4580	\$3.4580	0.00%	0.00%	0.00%	\$0.0000
Commodity Margin	\$1.2434	\$0.9000	\$1.2434	\$1.2434	0.00%	38.16%	0.00%	\$0.0000
Demand Margin	\$2.0724	\$1.5000	\$2.0724	\$2.0724	0.00%	38.16%	0.00%	\$0.0000
Total Cost of Gas	\$9.5724	\$7.8436	\$4.9101	\$4.9215	-48.59%	-37.25%	0.23%	\$0.0114
Total Demand Cost	\$5.5304	\$4.9580	\$5.5304	\$5.5304	0.00%	11.54%	0.00%	\$0.0000
Avg Annual Cost	\$52,560.97	\$43,089.64	\$27,095.49	\$27,157.75	-48.33%	-36.97%	0.23%	\$62.27
Effect of proposed commodity change on average annual bills:								\$0.00
Effect of proposed demand change on average annual bills:								\$62.27

Note: The Commodity and Demand Margin numbers are subject to change once the Company's General Rate Case in Docket No. G007,011/GR-08-835 is finalized and the Commission issues its Decision. Thus in the subsequent Demand Entitlement filings, the Margin numbers will change.

## **CERTIFICATE OF SERVICE**

I, Sharon Ferguson, hereby certify that I have this day, served copies of the following document on the attached list of persons by electronic filing, e-mail, or by depositing a true and correct copy thereof properly enveloped with postage paid in the United States Mail at St. Paul, Minnesota.

**Minnesota Office of Energy Security  
Comments**

**Docket No. G011/M-09-1283**

Dated this 10<sup>th</sup> day of March, 2010

**/s/Sharon Ferguson**

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