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Minnesota Department of Commerce

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June 7, 2010

Burl W. Haar
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, Minnesota 55101-2147

RE: **Response Comments of the Minnesota Office of Energy Security**
Docket Nos. G007/M-09-1282, G011/M-09-1283, G011/M-09-1284, and G011/M-09-1285

Dear Dr. Haar:

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

> Requests (*Petitions*) submitted by Minnesota Energy Resources Corporation-PNG and Minnesota Energy Resources Corporation-NMU (MERC or Company) for approval of changes in demand entitlements on its NMU Purchased Gas Adjustment (PGA) system, Great Lakes Gas Transmission (Great Lakes) PGA system, Viking Gas Transmission (Viking) PGA system, and Northern Natural Gas (Northern) PGA system.

The *Petitions* were filed on November 2, 2009 by:

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

The OES filed its *Comments* reviewing MERC's Great Lakes and Viking PGA system demand entitlement filings on March 10, 2010. The OES later filed its *Comments* reviewing MERC's NMU and Northern PGA system demand entitlement filings on April 2, 2010. In these filings, the OES requested that MERC provide additional information in *Reply Comments*. Based on its review of MERC's filings, the OES concludes that a response to MERC-NMU and MERC-PNG's *Reply Comments* is necessary to establish a complete record in this matter. As such, the OES requests that the Minnesota Public Utilities Commission (Commission) accept these *Response Comments* to MERC's *Reply Comments*. Given similar recommendations in each filing, the OES files a single set of *Response Comments* for all four dockets.

Based on its review of MERC's *Reply Comments*, the OES recommends that the Commission:

- **require**, until actual daily transportation and interruptible data is available for all customers, that MERC use, for all its PGA systems, the modified non-firm gas use method as presented in its March 22, 2010 *Reply Comments* for the Great Lakes PGA system;
- **approve** the PGA recovery of costs associated with MERC-NMU's proposed demand entitlement level effective November 1, 2009;
- **approve** MERC-NMU's demand entitlement level;
- **require** MERC-NMU to provide in its next demand entitlement filing a full discussion of how MERC intends to deal with the capacity limitations currently in place on the Northern Natural Gas system and how it intends to charge appropriate rates to Northern pipeline customers on both the MERC-NMU and MERC-PNG Northern PGA systems;
- **approve** the PGA recovery of costs associated with MERC-PNG's proposed Great Lakes PGA system demand entitlement level effective November 1, 2009;
- **approve** MERC-PNG's Great Lakes PGA system demand entitlement level;
- **require** MERC-PNG to refund any, and all, over-recoveries associated with the Call Option rate impact calculation for its Great Lakes PGA system, discussed in the OES's *Comments*, in the Company's September 1, 2010 true-up filing and accompanying true-up factor;
- **approve** the PGA recovery of costs associated with MERC-PNG's Northern PGA system demand entitlement level, based on FDD storage costs being included in the commodity cost of gas, as presented in the Company's initial petition, Attachment 11, and OES Attachment 7 in its April 2, 2010 *Comments* effective November 1, 2009;
- **approve** MERC-PNG's Northern PGA system demand entitlement level;
- **approve** the PGA recovery of costs associated with MERC-PNG's proposed Viking PGA demand entitlement level effective November 1, 2009 system cost recovery proposal, presented in the Company's initial petition; and
- **approve** MERC-PNG's Viking PGA system demand entitlement level.

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 NOS. G007/M-09-1282, G011/M-09-1283, G011/M-09-1284, and G011/M-09-1285

I. BACKGROUND

The following rounds of comments have been submitted to the Minnesota Public Utilities Commission (Commission) in Minnesota Energy Resources Corporation-NMU's and Minnesota Energy Resources Corporation-PNG's (MERC or Company) 2009-2010 demand entitlement filings for its NMU Purchased Gas Adjustment (PGA) system, Great Lakes Transmission (Great Lakes) PGA system, Viking Gas Transmission (Viking) PGA system, and Northern Natural Gas (Northern) PGA system:

- November 1, 2009, MERC's initial *Petition* in each PGA system demand entitlement filing;
- March 10, 2010, Minnesota Office of Energy Security's (OES) *Comments* in the Great Lakes and Viking PGA system demand entitlement filings;
- March 22, 2010, MERC's *Reply Comments* in the Great Lakes and Viking PGA system demand entitlement filings;
- April 2, 2010, OES *Comments* in the NMU and Northern PGA system demand entitlement filings;
- April 12, 2010, MERC's *Reply Comments* in the NMU and Northern PGA system demand entitlement filings;[1] and
- June 7, 2010, OES's *Response Comments*.

[1] On April 28, 2010, MERC filed additional information for its NMU PGA system demand entitlement filing that was inadvertently omitted from the E-docketing system because of a technical issue when the *Reply Comments* were initially filed.

II. THE OES'S RESPONSE TO MERC'S REPLY COMMENTS

A. OES RECOMMENDATIONS COMMON TO EACH OF MERC'S PGA SYSTEM DEMAND ENTITLEMENT FILINGS

In its *Comments* in each of MERC's four PGA system demand entitlement filings, the OES made two similar recommendations:

- a full discussion detailing how MERC 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; and
- a full discussion explaining why MERC uses a wind chill calculation different than the National Weather Service's (NWS) wind chill calculation and what, if any, impact using the official wind chill calculation has on MERC's design-day forecast(s).

The OES discusses each of these recommendations separately below.

1. MERC's Telemetry Installation Plan

As noted above, the OES requested that MERC provide, in its *Reply Comments*, a full discussion of how the Company intends to implement its telemetry installation plan. In its *Reply Comments*, MERC states that, based on the current business schedules, it intends to have the installations completed sometime in late 2010 or early 2011. The OES is encouraged by this response, since it indicates that much improved firm sales data will be available either starting sometime during the upcoming 2010-2011 heating season or, at the latest, during the 2011-2012 heating season. It is important to note however that, based on its current design-day method, MERC will still need to estimate some amount of daily interruptible and transportation usage in the coming years. For example, assuming MERC is able to complete its telemetry installation by November 1, 2010, the Company will still be using some amount of estimated interruptible and transportation usage data through the 2012-2013 heating season demand entitlement filings. Thus, the 2013-2014 heating season will be the earliest possible filing year where the Company's design-day can be estimated with only firm specific daily usage.

On page 3 of its MERC Northern PGA system *Reply Comments*, the Company includes a footnote noting that the Commission's June 29, 2009 *Order* in Docket No. G007,011/GR-08-835 allows MERC to require telemetry for its transportation customers. MERC further explains that this *Order* also requires MERC to continue offering Small Volume Balancing Service to its interruptible customers. According to MERC, once telemetry is in place, the Company will no longer need to estimate daily interruptible and transportation usage. Based on this explanation, it would appear that the Small Volume Balancing Service allows MERC to monitor daily interruptible customer usage.

Based on the information provided by MERC in its *Reply Comments*, the OES believes that the Company has adequately addressed this issue. However, as discussed above, the OES reiterates that MERC will have to base its design day analysis, in part, on daily usage data based on estimated interruptible and transportation customer usage data for, at a minimum, three more heating season demand entitlement cycles. The concerns explained by the OES in its *Comments* will remain valid for the next few demand entitlement cycles but MERC is addressing the issue in a reasonable manner. As such, the OES does not anticipate raising these issues in future demand entitlement filings.

2. *MERC's Adjusted Heating Degree Day (HDD) Calculation Compared to the National Weather Service's Wind Chill Calculation*

In its *Comments*, the OES requested that MERC provide additional information about its adjusted HDD calculation, why it is different than the NWS's wind-chill calculation, and what impact using the NWS's wind-chill calculation would have on the Company's design-day forecasts. In its *Reply Comments*, MERC provided additional information about its wind-adjusted HDD calculation and compared this calculation to the NWS's wind-chill calculation.

MERC explains that the NWS's wind-chill calculation is intended to compute how cold a specific combination of ambient temperature and wind speed feels on exposed human skin and how long it will take before frostbite occurs. The Company's wind-adjusted HDD calculation is a means of estimating wind's influence on heating load which, according to MERC, has been indicated empirically as improving usage estimates. Since the two calculations attempt to measure a similar phenomenon (wind's impact on a living creature and wind's impact on an inanimate object), MERC states that it is possible that wind chill may produce better results and, as such, it conducted an updated design-day analysis for each of its PGA systems using HDDs adjusted for wind chill instead of its wind adjusted HDD factor.

As part of its analysis, MERC explained that there are two generally accepted factors that determine whether a regression analysis reasonably "explains" the information at hand, in this case natural gas consumption. The Company states that these two metrics are the standard error of regression, or sigma, which measures how far a given estimate deviates from the projected regression line, and, a related statistic, the R-squared value, which measures how well changes in the dependent variable (usage) are explained by the set of independent variables (*e.g.,* HDDs, day of the week, month) in the model. For each PGA system, when comparing these metrics for the regression models with HDDs adjusted for wind chill as calculated by the NWS to the regression models using MERC's wind-adjusted HDD factor, the Company found that its wind-adjusted HDD factor produced more robust regression outputs, which indicates that MERC's wind-adjusted HDD factor may be a better predictor of wind's impact on heating load than the NWS's wind-chill factor. Based on MERC's reply, the OES does not have any additional concerns related to this topic.

B. OES RECOMMENDATIONS MADE IN INDIVIDUAL PGA SYSTEM DEMAND ENTITLEMENT FILINGS.

In addition to the recommendations that the OES made in its *Comments* in each PGA system demand entitlement filing, the OES also made specific recommendations related to individual PGA system filings. The OES discusses these recommendations separately, by PGA system, below.

1. MERC's Response to OES Recommendations for the NMU PGA System (Docket No. G007/M-09-1282)

Based on concerns associated with MERC-NMU's design-day calculations, the OES withheld recommendations on the Company's demand entitlement filing until MERC provided certain information in its *Reply Comments*. Specifically, the OES recommended that the Company provide the following:

a) a full justification of the peak-day calculations the Company used to procure total entitlements for the Great Lakes and Centra pipelines;
b) a full explanation of whether there are sufficient entitlements to serve MERC-NMU's Northern pipeline firm customers on a peak day; and
c) a full explanation of how firm entitlements shift between MERC-NMU and MERC-PNG on the Northern pipeline system.

MERC provided a response to each issue in its April 12, 2010 *Reply Comments*.[2]

a) Total entitlements for the Great Lakes and Centra pipelines

In its *Reply Comments*, MERC provides a detailed discussion of its peak-day calculations for its Centra and Great Lakes pipeline systems. The Company begins its discussion by stating that it appears that the deficient entitlement levels on these two systems are indicative of the need to incorporate daily metering from all non-firm customers into the process of forecasting peak-day demand on the system. MERC further states that, based on usage graphs, the deficient entitlement days on the Centra and Great Lakes pipelines are likely the result of non-heating, or process-driven load, as evidenced by demand placed on the system during those days by interruptible or transportation customers. Based on calculations and graphs, MERC states that it is possible that this high non-firm load may have exceeded the non-firm usage estimates used by the Company and the OES in their analyses. As a result, MERC concludes that use of actual non-firm loads in the calculation would mean that firm entitlements were reasonably calculated.

[2] Based on a technical error, MERC was unable to file all of the information in its *Reply Comments*. This additional information was filed with the Commission on April 28, 2010.

The OES appreciates MERC's response and, based on this response, the OES is confident that the Company is committed to firm reliability and is attempting to estimate peak-day use in the best way available based on the data available at this time. Further, the OES is aware that MERC is in the process of installing telemetry for non-firm customers. However, despite firm entitlements being reasonably estimated, over-stated estimates of usage by non-firm customers can still negatively impact firm reliability on a peak day. As such, while these issues will not be an issue in the near future, as long as estimated non-firm usage is included in the Company's peak day calculations, the non-firm usage concerns discussed in this proceeding are still relevant. In addition, it is important for MERC to enforce its interruptible and transportation tariffs, and interrupt customers as needed, so that non-firm usage does not impact firm reliability of a peak day. Given the issues identified in this proceeding, and the relatively short period of time before MERC's current analysis will become obsolete given non-firm telemetry, the OES does not recommend any further action on this issue.

b) *Entitlements to serve MERC-NMU's Northern pipeline firm customers; and*
c) *How firm entitlements shift between MERC-NMU and MERC-PNG on the Northern system*

MERC also provides a full discussion in its *Reply Comments* responding to the OES's concerns related to peak day reliability on MERC's Northern pipeline system and how the Company transfers entitlements between MERC-PNG's Northern PGA system and MERC-NMU's Northern pipeline system. In its discussion, MERC notes that Attachment 5 in its Northern PGA system initial filing (Docket No. G011/M-09-1284) indicates that MERC-PNG Northern has a large positive reserve margin of 13.62 percent and MERC-NMU Northern has a negative reserve margin of -4.33 percent. MERC further states that capacity is allocated between MERC-PNG and MERC-NMU based upon contractual delivery points and, even though Attachment 5 indicates that MERC-NMU has a negative reserve margin, excess capacity from MERC-PNG can be used to meet design-day requirements on MERC-NMU. Therefore, there is sufficient firm capacity to ensure reliability on the MERC-NMU Northern pipeline in the event of a peak day.

Since MERC can transfer capacity between the MERC-PNG and MERC-NMU PGA system on its Northern pipeline system, and based on its design-day analysis in the Northern PGA system docket, the OES believes that there is sufficient capacity to ensure peak-day reliability for firm customers served by the Northern pipeline. However, the OES is concerned that MERC is carrying demand capacity on its Northern PGA system to account for design-day use by firm customers on the NMU PGA system. This is a concern since it appears that customers on the Northern PGA system are paying higher rates to subsidize NMU PGA customers and that customers on the MERC-NMU PGA system are paying demand rates that are lower than what is appropriate. MERC states in its *Reply Comments* that Northern Natural Gas does not have additional space available in the NMU region to allow the Company to shift capacity between MERC-PNG and MERC-NMU. Given this limitation, the OES recommends that MERC provide a full discussion in its next demand entitlement filing explaining how MERC intends to deal with

this limitation imposed by Northern Natural Gas and how MERC intends to charge appropriate rates to Northern pipeline customers on both the MERC-NMU and MERC-PNG Northern PGA systems.

Based on its analysis, the OES recommends that the Commission:

- approve the PGA recovery of costs associated with MERC-NMU's proposed demand entitlement level effective November 1, 2009;
- approve MERC-NMU's demand entitlement level; and
- require MERC-NMU to provide in its next demand entitlement filing a full discussion of how MERC intends to deal with the capacity limitations currently in place on the Northern Natural Gas system, and how MERC intends to charge appropriate rates to Northern pipeline customers on both the MERC-NMU and MERC-PNG Northern PGA systems.

2. MERC's Response to OES Recommendations for the Great Lakes PGA System (Docket No. G011/M-09-1283)

Based on concerns associated with MERC's Great Lakes PGA system design-day calculations, the OES withheld recommendations on the Company's demand entitlement filing until MERC provided certain information in its *Reply Comments*. Specifically, the OES recommended that the Company provide the following:

- a full discussion explaining how the Company arrived at its estimates of use by interruptible and transportation customers that MERC 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.

MERC provided a response to each of these requests in its March 10, 2010 *Reply Comments*.

In its *Reply Comments*, MERC provided a detailed, step-by-step explanation of its current estimates of energy use by interruptible and transportation customers as requested by the OES in its *Comments*. Based on the Company's explanation, the OES concludes that MERC used a

reasonable approach to estimate non-firm peak-day use. However, the OES notes that in MERC's discussion of the circumstances surrounding the 2008-2009 heating season peak day, which is evaluated below, the Company, after further analysis, decided to use an improved means to estimate energy use by non-firm customers in its 2008-2009 peak-day estimate. Given the telemetry installations and small volume interruptible balancing service, as discussed in Section A above, the OES notes that estimating non-firm usage will be significantly easier in the near future and, given MERC's explanation in *Reply Comments*, the OES does not have any further concerns related to this issue.

The Company provides a thorough discussion of its volume risk adjustment and decision to use a 97.5 percent confidence level instead of a 99.9 percent confidence level in its *Reply Comments*. MERC states that its decision to choose the 97.5 percent was based on the premise of striking a reasonable balance between the probability of design-day weather resulting in requirements higher than the forecast and the incremental cost of providing additional peak-day supply and capacity. Further, the Company's decision to select the 97.5 percent confidence level has some support from the practices of other natural gas local distribution companies (LDC).

In addition, MERC provides, in its *Reply Comments*, an estimate of the additional volumes needed to serve firm customers at the 99 percent confidence level and the additional costs that firm customers would pay. Using its peak-day analysis, modified with a 99 percent confidence level, MERC estimates that it would need to add an incremental 478 Mcf/day of capacity to serve Great Lakes firm customers. Assuming procurement of additional twelve month capacity at $3.548 per Mcf, MERC calculates incremental costs of approximately $19,835 which when divided by the number of firm customers (6,068) translates into roughly $3.27 a year per firm customer.

While the incremental cost of using a 99 percent confidence level is relatively small, the OES does not believe this additional amount of capacity is necessary. Based on information in the OES's *Comments*, Attachment 3, it does not appear that, even with the additional 478 Mcf/day of capacity needed to reach this confidence level, firm customers would be at significant risk of reliability issues on a peak day. Given the information in the record, the OES believes that MERC's 97.5 percent confidence level is reasonable and, as such, the OES no longer has any concerns with this issue.

In its *Comments*, the OES asked that MERC provide an explanation discussing the circumstances surrounding the peak-day sendout during the 2008-2009 heating season. The OES requested this information since peak-day usage during the 2008-2009 heating season was significantly higher than during the same day in the 2007-2008 heating season. In its *Reply Comments*, MERC states that it does not have daily usage capabilities for all of its interruptible and transportation customers; therefore, the Company has to estimate these customers' use before determining firm peak day usage. While reviewing its peak-day calculations, MERC observed that its original peak-day calculation was probably not the best way to estimate actual non-firm volumes. The

Company now believes that a more reasonable approach is to subtract actual usage by interruptible and transportation customers where available from total actual peak-day throughput, and then subtract out the estimates of non-firm usage for those customers where actual daily data is unavailable. Based on this new calculation, MERC determined that actual firm peak-day usage during the 2008-2009 heating season was 8,064, not 9,777 Mcf as originally estimated. In addition, based on this modified approach, MERC believes that its original firm peak-day usage calculation for the 2007-2008 heating season was inaccurate. Using its new approach, MERC calculates a 2007-2008 heating season peak day firm usage of 8,127 Mcf.[3] After reviewing MERC's discussion and explanation, the OES no longer has concerns associated with peak-day use during the 2008-2009 heating season.

Based on MERC's Great Lakes PGA System *Reply Comments*, the OES recommends that the Commission:

- approve MERC's Great Lakes demand entitlement level;
- approve MERC's proposed cost recovery proposal as presented in the Company's initial petition; and
- require, until actual daily transportation and interruptible data is available for all customers, that MERC use the modified non-firm gas use method as presented in its March 22, 2010 *Reply Comments* for the Great Lakes PGA system.

3. MERC's Response to OES Recommendations for the Northern PGA System (Docket No. G011/M-09-1284)

Based on concerns associated with MERC's Northern PGA system design-day calculations, the OES withheld recommendations on the Company's demand entitlement filing until MERC provided certain information in its *Reply Comments*. Specifically, the OES recommended that the Company provide:

- an updated design-day analysis, and all supporting models and data, that corrects the data error referenced by the Company in its discussions with the OES;
- a discussion clarifying whether the TFX contract included in the Company's November 2009 PGA filing should be a seven-month or a twelve-month contract; and
- a full discussion justifying the large reserve margin on its Northern PGA system.

[3] These modified calculations are incorporated into a revised OES Attachment 4. This revised attachment is included as OES Attachment R-1 to these *Response Comments*.

The OES also recommended that, on a going-forward basis, MERC conduct its design-day analysis using weather data from the following weather stations: Cloquet, MN; Minneapolis-St. Paul, MN; Rochester, MN; and Worthington, MN. MERC discussed these issues in its April 12, 2010 *Reply Comments*.

As discussed in the OES's *Comments*, MERC incorrectly calculated its Northern PGA system design day and was directed by the OES to update this analysis in its *Reply Comments*. MERC corrected this data error, and made adjustments to its non-firm usage estimates based on unexpected sales in December 2008, and calculated a revised design-day estimate of 206,333 Mcf/day. This revised design-day estimate represents a small increase compared to MERC's originally calculated design-day figure; however, it is important to note, that this increase does not bring MERC's design-day figure above the Company's total entitlement estimate. Using information and peak-day calculations provided by MERC in its *Reply Comments*, the OES conducted further peak-day analyses to determine whether the Company will have sufficient capacity on a peak-day to serve firm customers. Based on the OES's analysis, it appears that MERC has contracted for sufficient capacity to ensure firm reliability on a day with conditions similar to the Company's all-time peak day sendout (OES Attachment R-2). Therefore, the OES does not have any further concerns related to this issue.

MERC provides an explanation in its *Reply Comments* clarifying the contract length for a TFX contract discussed in the OES's *Comments*. MERC states in its *Reply Comments* that the OES was correct when it noticed that this contract was incorrectly labeled as TFX7 when it is a TFX12 contract. The Company further states that the OES correctly designated this capacity in its attachments. Given this explanation, the OES does not have further concerns related to this TFX contract.

In its *Comments*, the OES noted that MERC proposes a 13.62 reserve margin for its Northern PGA system. This level represented an issue for the OES since it was a significant increase in the reserve margin from the last heating season and was above the five percent threshold that the OES generally considers an adequate reserve margin. Given this observation, the OES recommended that MERC provide a discussion justifying the large reserve margin in its *Reply Comments*. MERC states in its *Reply Comments* that its total Northern firm entitlement figure includes an agreement with LS Power for an option to call on capacity for up to 20 days between December and February. The Company further states that it pays $392,022 on an annual basis to procure this option. If MERC were to contract for a five percent reserve margin, it would be required to terminate its LS Power contract and instead procure seasonal capacity which, in MERC's analysis, would mean approximately 8,839 Mcf/day of TFX5. Based on current Northern tariff rates, according to the Company, this approach would result in an annual cost of $669,687, which is approximately $277,665 greater that current demand costs with the LS Power contract. Given the significant cost savings, the OES concludes that, for the circumstances surrounding this PGA system, MERC's reserve margin is reasonable and, as such, the OES does not have any additional concerns related to this issue.

In its *Reply Comments*, MERC agrees with the OES's recommendation that the Company use weather data from Worthington, MN in its design-day calculations. The OES appreciates the Company's agreement on this issue. On a matter related to future rate case sales forecasts, it may be productive for MERC to conduct its future rate case sales forecasts with weather data collected from Worthington, MN instead of Sioux Falls, South Dakota. The OES will not, however, make a specific recommendation on this issue at this time, since it is not clear if Worthington, MN has sufficient data to complete a robust test year sales forecast. The OES would appreciate hearing from MERC on this matter prior to when MERC files its next rate case.

Based on MERC's Northern PGA System *Reply Comments*, the OES recommends that the Commission:

- approve MERC's Northern PGA system demand entitlement level; and
- approve MERC's proposed cost recovery proposal, based on FDD storage costs being included in the commodity cost of gas, as presented in the Company initial petition, Attachment 11, and OES Attachment 7 in its April 2, 2010 *Comments*.

4. MERC's Response to OES Recommendations for the Viking PGA System (Docket No. G011/M-09-1285)

Based on concerns associated with MERC's Viking PGA system design day calculations, the OES withheld recommendations on the Company's demand entitlement filing until MERC provided certain information in its *Reply Comments*. Specifically, the OES recommended that the Company provide:

- a detailed explanation justifying the reasonableness of its design-day calculations for its Viking PGA system;
- a full discussion explaining why it chose the 97.5 percent confidence level that it uses in its design day analysis; and
- a full analysis, including supporting calculations, comparing demand costs at the 97.5 confidence level and at the 99.9 percent confidence level in its volume risk adjustment.

In its March 10, 2009 *Comments*, the OES voiced concern that, based on its calculations, MERC's Viking PGA system design day calculations may not be sufficient to ensure firm peak day reliability. As stated in MERC's March 22, 2010 *Reply Comments*, the Company contacted the OES seeking clarification of the OES's calculations and, based on this conversation, the OES noticed that it had an error in its calculation of MERC's estimated peak day throughput. After correcting this error, the OES's new calculation only has one date where estimated peak day use exceeded total entitlements on the Viking PGA system (OES Attachment R-3). These calculations indicate that peak day firm reliability is likely not endangered by MERC's design

day analysis. Given the calculations in OES Attachment R-3, the OES concludes that MERC's design-day analysis is acceptable and, as such, the OES does not have further concerns at this time.

The Company provides a thorough discussion of its volume risk adjustment and decision to use a 97.5 percent confidence level instead of a 99.9 percent confidence level in its *Reply Comments*. MERC states that its decision to choose the 97.5 percent was based on the premise of striking a reasonable balance between the probability of design-day weather resulting in requirements higher than the forecast and the incremental cost of providing additional peak-day supply and capacity. Further, the Company's decision to select the 97.5 percent confidence level has some support from the practices of other natural gas LDCs, as noted above.

In addition, MERC provides, in its *Reply Comments*, an estimate of the additional volumes need to serve firm customers at the 99 percent confidence level and the additional costs that firm customers would pay. Using its peak-day analysis, modified with a 99 percent confidence level, MERC estimates that it would need to add an incremental 199 Mcf/day of capacity to serve Great Lakes firm customers. Assuming procurement of additional twelve months of capacity at $3.4671 per Mcf, MERC calculates incremental costs of approximately $8,279 which when divided by the number of firm customers (4,408) translates into roughly $1.88 a year per firm customers.

Even though the incremental cost of using a 99 percent confidence level is relatively small, the OES does not believe it is necessary. Based on information in Attachment R-3, it does not appear that, even with the additional 199 Mcf/day of capacity needed to reach this confidence level, firm customers are at significant risk of reliability issues on a peak day.[4] Further, based on MERC's discussion, it appears that the Company is using an industry standard approach, in terms of the risk adjustment, for estimating a design day. Given the information in the record, the OES believes that MERC's 97.5 percent confidence level is reasonable and, as such, the OES no longer has any concerns with this issue.

Based on the MERC's Viking PGA System *Reply Comments*, the OES recommends that the Commission:

- approve MERC's Viking PGA system demand entitlement level; and
- approve MERC's proposed Viking PGA system cost recovery proposal, presented in the Company initial petition.

[4] Even with the additional 199 Mcf/day, there is no change in final results in OES Attachment R-3.

III. THE OES'S CONCLUSION AND RECOMMENDATIONS

Based on its review of MERC's *Reply Comments*, the OES recommends that the Commission:

- require, until actual daily transportation and interruptible data is available for all customers, that MERC use, for all its PGA systems, the modified non-firm gas use method as presented in its March 22, 2010 *Reply Comments* for the Great Lakes PGA system;
- approve the PGA recovery of costs associated with MERC-NMU's proposed demand entitlement level effective November 1, 2009;
- approve MERC-NMU's demand entitlement level;
- require MERC-NMU to provide in its next demand entitlement filing a full discussion of how MERC intends to deal with the capacity limitations currently in place on the Northern Natural Gas system and how it intends to charge appropriate rates to Northern pipeline customers on both the MERC-NMU and MERC-PNG Northern PGA systems;
- approve the PGA recovery of costs associated with MERC-PNG's proposed Great Lakes PGA system demand entitlement level effective November 1, 2009;
- approve MERC-PNG's Great Lakes PGA system demand entitlement level;
- require MERC-PNG to refund any, and all, over-recoveries associated with the Call Option rate impact calculation for its Great Lakes PGA system, discussed in the OES's *Comments*, in the Company's September 1, 2010 true-up filing and accompanying true-up factor;
- approve the PGA recovery of costs associated with MERC-PNG's Northern PGA system demand entitlement level, based on FDD storage costs being included in the commodity cost of gas, as presented in the Company's initial petition, Attachment 11, and OES Attachment 7 in its April 2, 2010 *Comments* effective November 1, 2009;
- approve MERC-PNG's Northern PGA system demand entitlement level;
- approve the PGA recovery of costs associated with MERC-PNG's proposed Viking PGA demand entitlement level effective November 1, 2009 system cost recovery proposal, presented in the Company's initial petition; and
- approve MERC-PNG's Viking PGA system demand entitlement level.

/ja

Minnesota Office of Energy Security Attachment R-1
MERC-PNG's Great Lakes Purchased Gas Adjustment Area Demand Entitlement Analysis

	Number of Firm Customers			Design Day Requirement			Total Entitlement + Peak Shaving + Peak Shaving			Reserve Margin
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Heating Season *	Number of DD Customers	Change From Previous Year	% Change From Previous Year	Design Day (Mcf)	Change From Previous Year	% Change From Previous Year	Total Entitlement (Mcf)	Change From Previous Year	% Change From Previous Year	% of Reserve Margin [(7)-(4)]/(4)
2009-2010	6,068	194	3.30%	10,802	503	4.88%	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	3.65%	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%	7,269	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.

Firm Peak Day Sendout

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
Heating Season *	Number of Peak Day Customers	Firm Peak Day Sendout (Mcf)	Sendout Change from Previous Year	% Change From Previous Year	Excess per Customer [(7) - (4)]/(1)	Design Day per Customer (4)/(1)	Entitlement per Customer (7)/(1)	Peak Day Sendout per PD Customer (12)/(11)	Peak Day Sendout per DD Customer (12)/(1)
2009-2010	unknown	unknown			0.1150	1.7802	1.8952	unknown	unknown
2008-2009^	6,144	8,064	(63)	-0.78%	0.0342	1.7533	1.7875	1.3125	1.3728
2007-2008	unknown	8,127	1,355	20.01%	0.0774	1.6420	1.7194	unknown	1.3974
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	1.7828	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	1.6647	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:				5.38%	-0.0257	1.6832	1.6820	1.3429	1.3609

-- 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.

Prepared by the Minnesota Office of Energy Security

OES's Analysis of MERC's Revised Northern PGA System Peak Day Regression

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.956960168
R Square	0.915772763
Adjusted R Square	0.914506188
Standard Error	9335.665675
Observations	271

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	2.52062E+11	63015500933	723.0308232	1.4941E-141
Residual	266	23183137857	87154653.6		
Total	270	2.75245E+11			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*Upper 95.0%*
Intercept	29,709.1463	2,403.4708	12.3609	0.0000	24976.89905	34441.393	24978.899	34441.3935
AHDD65	2,197.6992	41.5228	52.9276	0.0000	2115.944165	2279.4543	2115.9442	2279.4543
Fri	(6,208.6500)	1,666.2075	(3.7262)	0.0002	-9489.283064	-2928.017	-9489.283	-2928.0169
Sat	(9,818.8702)	1,594.1529	(6.1593)	0.0000	-12957.63332	-6680.107	-12957.63	-6680.107
Sun	(6,187.8203)	1,666.1106	(3.7139)	0.0002	-9468.262441	-2907.378	-9468.262	-2907.3781

PNG-NNG Peak Day Regression for Winter 2010

2	3	4	5		8			24	25	26						
	(Mon=1)	Cloquet	Minneapolis	Rochester	Total											
Date	**Day**	**Daily Meter**	**Daily Meter**	**Daily Meter**	**Daily Meter**	**AHDD65**	**HDD65**	**CommPeak**	**Fri**	**Sat**	**Sun**		**Peak AHDD**	**Estimated Interruptible Use**	**Estimated Firm Use**	**MERC Procured Peak Day**	**Difference Between Firm Use and Estimated Total Entitlement**	**0= Sufficient Capacity 1=Estimated Firm Use Greater than Total Entitlement**
12/1/2006	5	5,803	48,053	91,707	145,563	52.3	48.0	90.0	1	0	0		222,226	76,449	145,777	261,675	(115,898)	0
12/2/2006	6	6,306	53,862	98,675	158,844	56.6	48.8	90.0	0	1	0		222,477	76,449	146,028	261,675	(115,647)	0
12/3/2006	7	6,530	54,292	102,648	163,471	61.9	55.3	90.0	0	0	1		219,108	76,449	142,659	261,675	(119,016)	0
12/4/2006	1	7,003	58,891	113,166	179,061	59.4	51.4	90.0	0	0	0		246,274	76,449	169,825	261,675	(91,850)	0
12/5/2006	2	6,046	47,418	91,426	144,890	51.2	45.2	90.0	0	0	0		230,083	76,449	153,634	261,675	(108,041)	0
12/6/2006	3	7,255	59,763	112,261	179,280	53.9	46.0	90.0	0	0	0		258,686	76,449	182,237	261,675	(79,438)	0
12/7/2006	4	7,292	58,785	116,581	182,658	65.3	58.6	90.0	0	0	0		237,009	76,449	160,560	261,675	(101,115)	0
12/8/2006	5	5,283	41,052	87,087	133,422	51.3	45.4	90.0	1	0	0		212,231	76,449	135,782	261,675	(125,893)	0
12/9/2006	6	4,268	29,507	56,457	90,232	33.8	29.8	90.0	0	1	0		203,868	76,449	127,419	261,675	(134,256)	0
12/10/2006	7	4,157	32,305	59,962	96,424	29.7	26.5	90.0	0	0	1		222,804	76,449	146,355	261,675	(115,320)	0
12/11/2006	1	3,946	34,013	68,721	106,680	33.1	30.0	90.0	0	0	0		231,673	76,449	155,224	261,675	(106,451)	0
12/12/2006	2	3,991	36,713	71,596	112,300	31.2	28.4	90.0	0	0	0		241,443	76,449	164,994	261,675	(96,681)	0
12/13/2006	3	4,016	33,836	66,853	104,705	34.1	31.0	90.0	0	0	0		227,449	76,449	151,000	261,675	(110,675)	0
12/14/2006	4	3,896	30,707	61,111	95,714	27.2	23.7	90.0	0	0	0		233,621	76,449	157,372	261,675	(104,303)	0
12/15/2006	5	4,454	35,514	73,275	113,243	36.1	32.3	90.0	1	0	0		225,477	76,449	149,028	261,675	(112,647)	0
12/16/2006	6	4,110	29,814	57,510	91,434	29.8	26.0	90.0	0	1	0		216,123	76,449	139,674	261,675	(122,001)	0
12/17/2006	7	4,829	40,445	72,095	117,369	37.7	34.2	90.0	0	0	1		226,121	76,449	149,672	261,675	(112,003)	0
12/18/2006	1	5,549	42,586	81,829	129,964	43.7	40.5	90.0	0	0	0		231,808	76,449	155,359	261,675	(106,316)	0
12/19/2006	2	4,397	35,654	70,547	110,598	37.1	33.5	90.0	0	0	0		226,881	76,449	150,432	261,675	(111,243)	0
12/20/2006	3	4,349	36,275	67,274	107,899	32.7	30.4	90.0	0	0	0		233,784	76,449	157,335	261,675	(104,340)	0
12/21/2006	4	4,472	36,553	67,680	108,705	35.4	31.9	90.0	0	0	0		228,610	76,449	152,161	261,675	(109,514)	0
12/22/2006	5	4,164	33,878	64,923	102,966	35.1	31.7	90.0	1	0	0		217,516	76,449	141,067	261,675	(120,608)	0
12/23/2006	6	4,699	35,177	66,985	106,861	37.7	33.7	90.0	0	1	0		212,047	76,449	135,598	261,675	(126,077)	0
12/24/2006	7	4,536	33,500	60,156	98,192	36.2	32.7	90.0	0	1	0		206,700	76,449	130,251	261,675	(131,424)	0
12/25/2006	1	5,029	37,042	71,736	113,807	41.8	37.4	90.0	0	0	1		213,581	76,449	137,132	261,675	(124,543)	0
12/26/2006	2	4,645	36,181	69,070	109,896	40.8	38.0	90.0	0	0	0		218,067	76,449	141,618	261,675	(120,057)	0
12/27/2006	3	4,244	33,441	67,868	105,553	32.7	30.2	90.0	0	0	0		231,481	76,449	155,032	261,675	(106,643)	0
12/28/2006	4	4,585	33,892	62,202	100,679	30.7	27.8	90.0	0	0	0		231,094	76,449	154,645	261,675	(107,030)	0
12/29/2006	5	4,143	32,717	60,546	97,406	32.5	30.3	90.0	1	0	0		217,521	76,449	141,072	261,675	(120,603)	0
12/30/2006	6	3,902	28,897	52,189	84,988	29.8	26.4	90.0	0	1	0		207,421	76,449	130,972	261,675	(130,703)	0
12/31/2006	7	4,606	35,479	64,511	104,596	32.4	28.3	90.0	0	1	0		221,319	76,449	144,870	261,675	(116,805)	0

OES Attachment R-2
MERC-PNG's Revised Design Day Regression Output and the OES's Analysis of MERC-PNG's Northern Peak Day Calculations

1/1/2007	1	5,493	38,491	65,331	109,315	43.7	38.8	90.0	0	0	1		204,840	76,449	128,391	261,675	(133,284)	0
1/2/2007	2	4,787	36,901	63,959	105,647	42.0	37.1	90.0	0	0	0		211,088	76,449	134,639	261,675	(127,036)	0
1/3/2007	3	4,746	34,795	55,912	95,453	34.6	30.0	90.0	0	0	0		217,146	76,449	140,697	261,675	(120,978)	0
1/4/2007	4	4,085	32,559	52,926	89,570	29.5	26.4	90.0	0	0	0		222,583	76,449	146,134	261,675	(115,541)	0
1/5/2007	5	4,189	34,135	61,812	100,136	34.7	31.7	90.0	1	0	0		215,489	76,449	139,040	261,675	(122,635)	0
1/6/2007	6	4,722	33,020	55,283	93,025	36.3	32.7	90.0	0	1	0		201,168	76,449	124,719	261,675	(136,956)	0
1/7/2007	7	5,394	41,799	67,998	115,191	41.7	35.8	90.0	0	0	1		215,175	76,449	138,726	261,675	(122,949)	0
1/8/2007	1	5,739	42,431	70,062	118,232	41.4	37.9	90.0	0	0	0		224,954	76,449	148,505	261,675	(113,170)	0
1/9/2007	2	6,589	49,782	85,870	142,241	52.1	45.1	90.0	0	0	0		225,498	76,449	149,049	261,675	(112,626)	0
1/10/2007	3	5,477	39,896	69,737	115,110	45.7	39.6	90.0	0	0	0		212,373	76,449	135,924	261,675	(125,751)	0
1/11/2007	4	6,001	46,309	84,597	136,907	39.0	34.6	90.0	0	0	0		249,035	76,449	172,586	261,675	(89,089)	0
1/12/2007	5	8,151	61,404	110,952	180,507	60.4	52.4	90.0	1	0	0		239,241	76,449	162,792	261,675	(98,883)	0
1/13/2007	6	7,319	54,153	96,361	157,833	59.8	56.6	90.0	0	1	0		214,276	76,449	137,827	261,675	(123,848)	0
1/14/2007	7	7,523	52,818	94,656	154,997	52.3	47.9	90.0	0	0	1		231,645	76,449	155,196	261,675	(106,479)	0
1/15/2007	1	7,821	60,529	123,223	191,573	64.9	57.9	90.0	0	0	0		246,646	76,449	170,197	261,675	(91,478)	0
1/16/2007	2	7,758	61,706	121,005	190,469	72.2	67.2	90.0	0	0	0		229,490	76,449	153,041	261,675	(108,634)	0
1/17/2007	3	6,698	51,174	94,377	152,249	62.2	53.5	90.0	0	0	0		213,281	76,449	136,832	261,675	(124,843)	0
1/18/2007	4	6,483	49,858	89,118	145,459	49.8	43.8	90.0	0	0	0		233,898	76,449	157,449	261,675	(104,226)	0
1/19/2007	5	7,058	52,907	92,137	152,102	58.8	52.6	90.0	1	0	0		214,461	76,449	138,012	261,675	(123,663)	0
1/20/2007	6	6,224	46,881	80,964	134,069	59.9	54.6	90.0	0	1	0		190,312	76,449	113,863	261,675	(147,812)	0
1/21/2007	7	5,875	44,058	77,014	126,947	47.1	44.6	90.0	0	0	1		214,931	76,449	138,482	261,675	(123,193)	0
1/22/2007	1	6,306	49,285	86,411	142,002	51.0	46.1	90.0	0	0	0		227,793	76,449	151,344	261,675	(110,331)	0
1/23/2007	2	6,222	48,093	81,966	136,281	51.8	47.4	90.0	0	0	0		220,180	76,449	143,731	261,675	(117,944)	0
1/24/2007	3	6,391	46,068	80,676	133,135	49.9	46.3	90.0	0	0	0		221,368	76,449	144,919	261,675	(116,756)	0
1/25/2007	4	6,149	46,486	79,472	132,107	52.6	48.5	90.0	0	0	0		214,397	76,449	137,948	261,675	(123,727)	0
1/26/2007	5	4,849	37,428	66,026	108,303	41.6	36.0	90.0	1	0	0		208,380	76,449	131,931	261,675	(129,744)	0
1/27/2007	6	7,470	55,281	98,223	163,974	61.4	51.9	90.0	0	1	0		216,975	76,449	140,526	261,675	(121,149)	0
1/28/2007	7	7,363	57,291	98,482	163,136	70.8	63.4	90.0	0	0	1		199,078	76,449	122,629	261,675	(139,046)	0
1/29/2007	1	7,172	57,960	104,234	169,366	59.3	52.3	90.0	0	0	0		236,828	76,449	160,379	261,675	(101,296)	0
1/30/2007	2	7,785	60,519	109,263	177,567	68.5	60.0	90.0	0	0	0		224,909	76,449	148,460	261,675	(113,215)	0
1/31/2007	3	7,187	58,880	109,354	175,421	63.3	56.0	90.0	0	0	0		234,008	76,449	157,559	261,675	(104,116)	0
2/1/2007	4	7,989	64,330	109,105	181,424	67.8	61.7	90.0	0	0	0		230,183	76,449	153,734	261,675	(107,941)	0
2/2/2007	5	8,662	66,593	113,264	188,519	76.8	67.4	90.0	1	0	0		211,428	76,449	134,979	261,675	(126,696)	0
2/3/2007	6	9,882	74,614	123,982	208,478	84.3	72.3	90.0	0	1	0		211,209	76,449	134,760	261,675	(126,915)	0
2/4/2007	7	9,882	76,000	137,194	223,076	84.9	76.2	90.0	0	0	1		228,011	76,449	151,562	261,675	(110,113)	0
2/5/2007	1	9,349	72,042	132,063	213,454	80.2	75.7	90.0	0	0	0		234,926	76,449	158,477	261,675	(103,198)	0
2/6/2007	2	8,740	69,630	123,037	201,407	73.3	68.0	90.0	0	0	0		238,070	76,449	161,621	261,675	(100,054)	0
2/7/2007	3	8,528	70,942	123,251	202,721	77.9	70.1	90.0	0	0	0		229,416	76,449	152,967	261,675	(108,708)	0
2/8/2007	4	8,274	69,377	117,729	195,380	78.8	70.8	90.0	0	0	0		219,919	76,449	143,470	261,675	(118,205)	0
2/9/2007	5	8,664	67,520	115,928	192,132	73.9	66.8	90.0	1	0	0		221,282	76,449	144,833	261,675	(116,842)	0
2/10/2007	6	7,463	58,855	100,659	166,977	75.5	68.5	90.0	0	1	0		189,132	76,449	112,683	261,675	(148,992)	0
2/11/2007	7	6,871	53,273	86,650	146,694	52.4	49.5	90.0	0	0	1		223,060	76,449	146,611	261,675	(115,064)	0
2/12/2007	1	6,991	55,266	95,255	157,514	53.3	48.7	90.0	0	0	0		238,136	76,449	161,687	261,675	(99,988)	0
2/13/2007	2	7,538	59,546	109,300	176,384	60.1	53.4	90.0	0	0	0		242,125	76,449	165,676	261,675	(95,999)	0
2/14/2007	3	7,982	63,604	116,230	187,816	69.6	63.3	90.0	0	0	0		232,687	76,449	156,238	261,675	(105,437)	0
2/15/2007	4	7,933	64,010	112,735	184,678	72.5	65.5	90.0	0	0	0		223,225	76,449	146,776	261,675	(114,899)	0
2/16/2007	5	6,397	52,488	95,274	154,159	65.3	58.1	90.0	1	0	0		202,335	76,449	125,886	261,675	(135,789)	0
2/17/2007	6	6,374	47,738	83,148	137,260	55.4	48.0	90.0	0	1	0		203,432	76,449	126,983	261,675	(134,692)	0
2/18/2007	7	6,475	48,816	83,177	139,468	55.2	49.5	90.0	0	0	1		209,653	76,449	133,204	261,675	(128,471)	0
2/19/2007	1	5,260	38,246	65,948	109,454	40.1	35.6	90.0	0	0	0		219,022	76,449	142,573	261,675	(119,102)	0
2/20/2007	2	4,561	34,046	60,515	99,122	38.4	35.9	90.0	0	0	0		212,619	76,449	136,170	261,675	(125,505)	0
2/21/2007	3	4,654	36,787	63,254	104,695	32.1	28.1	90.0	0	0	0		232,024	76,449	155,575	261,675	(106,100)	0
2/22/2007	4	5,499	40,266	70,785	116,550	44.2	38.7	90.0	0	0	0		217,232	76,449	140,783	261,675	(120,892)	0
2/23/2007	5	5,796	44,664	76,054	126,544	43.3	36.7	90.0	1	0	0		223,046	76,449	146,597	261,675	(115,078)	0
2/24/2007	6	5,571	44,074	72,680	122,325	45.1	37.9	90.0	0	1	0		211,271	76,449	134,822	261,675	(126,853)	0
2/25/2007	7	5,255	39,827	68,358	113,440	39.3	37.2	90.0	0	0	1		218,584	76,449	142,135	261,675	(119,540)	0
2/26/2007	1	5,104	38,168	70,184	113,456	38.6	37.7	90.0	0	0	0		226,363	76,449	149,914	261,675	(111,761)	0
2/27/2007	2	4,736	38,196	71,060	113,992	39.0	37.5	90.0	0	0	0		226,126	76,449	149,677	261,675	(111,998)	0
2/28/2007	3	4,918	37,676	66,844	109,438	40.8	38.3	90.0	0	0	0		217,655	76,449	141,206	261,675	(120,469)	0

OES Attachment R-2
MERC-PNG's Revised Design Day Regression Output and the OES's Analysis of MERC-PNG's Northern Peak Day Calculations

12/1/2007	6	6,179	48,431	75,116	129,726	49.9	43.5	90.0	0	1	0		207,991	76,449	131,542	261,675	(130,133)	0
12/2/2007	7	6,346	53,232	90,920	150,498	52.5	44.9	90.0	0	0	1		226,704	76,449	150,255	261,675	(111,420)	0
12/3/2007	1	6,707	52,814	94,114	153,635	57.7	53.3	90.0	0	0	0		224,693	76,449	148,244	261,675	(113,431)	0
12/4/2007	2	6,315	52,657	87,941	146,913	52.6	47.5	90.0	0	0	0		229,011	76,449	152,562	261,675	(109,113)	0
12/5/2007	3	7,262	57,115	100,343	164,720	61.1	55.7	90.0	0	0	0		228,136	76,449	151,687	261,675	(109,988)	0
12/6/2007	4	6,509	52,314	90,576	149,399	60.7	54.4	90.0	0	0	0		213,722	76,449	137,273	261,675	(124,402)	0
12/7/2007	5	7,531	58,073	95,508	161,112	59.5	54.5	90.0	1	0	0		221,934	76,449	145,485	261,675	(116,190)	0
12/8/2007	6	7,449	57,804	96,636	161,889	67.6	63.9	90.0	0	1	0		201,255	76,449	124,806	261,675	(136,869)	0
12/9/2007	7	7,611	58,221	90,903	156,735	59.8	57.3	90.0	0	0	1		217,016	76,449	140,567	261,675	(121,108)	0
12/10/2007	1	6,364	51,524	85,870	143,758	55.0	50.5	90.0	0	0	0		220,713	76,449	144,264	261,675	(117,411)	0
12/11/2007	2	6,616	53,625	93,970	154,211	50.1	45.8	90.0	0	0	0		241,850	76,449	165,401	261,675	(96,274)	0
12/12/2007	3	6,297	52,024	90,794	149,115	58.7	54.9	90.0	0	0	0		217,872	76,449	141,423	261,675	(120,252)	0
12/13/2007	4	6,734	55,303	91,705	153,742	51.9	44.4	90.0	0	0	0		237,478	76,449	161,029	261,675	(100,646)	0
12/14/2007	5	7,554	59,887	101,159	168,600	62.5	59.4	90.0	1	0	0		222,750	76,449	146,301	261,675	(115,374)	0
12/15/2007	6	6,251	50,870	86,051	143,172	53.9	52.7	90.0	0	1	0		212,689	76,449	136,240	261,675	(125,435)	0
12/16/2007	7	6,023	49,910	84,668	140,601	55.1	50.8	90.0	0	0	1		211,085	76,449	134,636	261,675	(127,039)	0
12/17/2007	1	5,535	47,228	80,300	133,063	51.4	46.3	90.0	0	0	0		217,912	76,449	141,463	261,675	(120,212)	0
12/18/2007	2	5,319	46,759	75,204	127,282	46.8	42.5	90.0	0	0	0		222,285	76,449	145,836	261,675	(115,839)	0
12/19/2007	3	5,250	48,054	75,241	128,545	46.9	43.5	90.0	0	0	0		223,215	76,449	146,766	261,675	(114,909)	0
12/20/2007	4	4,571	39,523	64,887	108,981	41.0	37.0	90.0	0	0	0		216,774	76,449	140,325	261,675	(121,350)	0
12/21/2007	5	4,169	34,631	56,961	95,761	33.5	30.5	90.0	1	0	0		213,652	76,449	137,203	261,675	(124,472)	0
12/22/2007	6	5,892	49,948	84,566	140,406	48.9	42.9	90.0	0	1	0		220,993	76,449	144,544	261,675	(117,131)	0
12/23/2007	7	6,373	55,737	98,441	160,551	69.4	56.0	90.0	0	0	1		199,713	76,449	123,264	261,675	(138,411)	0
12/24/2007	1	5,851	45,524	76,208	127,583	55.7	50.2	90.0	0	0	1		198,809	76,449	120,360	261,675	(141,315)	0
12/25/2007	2	5,183	39,252	63,371	107,806	42.9	39.5	90.0	0	1	0		201,500	76,449	125,051	261,675	(136,624)	0
12/26/2007	3	5,227	43,410	70,664	119,301	43.1	40.4	90.0	0	0	0		222,426	76,449	145,977	261,675	(115,698)	0
12/27/2007	4	5,860	44,204	76,174	126,238	43.8	40.8	90.0	0	0	0		227,709	76,449	151,260	261,675	(110,415)	0
12/28/2007	5	5,839	46,725	81,957	134,521	49.7	45.8	90.0	1	0	0		216,778	76,449	140,329	261,675	(121,346)	0
12/29/2007	6	5,653	44,202	77,157	127,012	47.7	44.8	90.0	0	1	0		210,182	76,449	133,733	261,675	(127,942)	0
12/30/2007	7	5,550	45,830	76,580	127,960	50.0	46.6	90.0	0	0	1		209,753	76,449	133,304	261,675	(128,371)	0
12/31/2007	1	6,359	51,822	88,464	146,645	51.5	46.8	90.0	0	0	1		225,029	76,449	148,580	261,675	(113,095)	0
1/1/2008	2	7,820	63,433	108,603	179,856	68.6	58.6	90.0	0	1	0		216,971	76,449	140,522	261,675	(121,153)	0
1/2/2008	3	7,959	62,417	110,199	180,575	68.8	63.0	90.0	0	0	0		227,189	76,449	150,740	261,675	(110,935)	0
1/3/2008	4	6,403	50,699	91,578	148,680	59.6	51.3	90.0	0	0	0		215,497	76,449	139,048	261,675	(122,627)	0
1/4/2008	5	5,551	43,378	70,892	119,821	47.0	41.4	90.0	1	0	0		208,010	76,449	131,561	261,675	(130,114)	0
1/5/2008	6	4,751	36,808	56,903	98,462	36.2	33.8	90.0	0	1	0		202,379	76,449	125,930	261,675	(135,745)	0
1/6/2008	7	4,553	34,539	54,011	93,103	30.5	28.2	90.0	0	0	1		217,760	76,449	141,311	261,675	(120,364)	0
1/7/2008	1	4,645	38,949	60,377	103,971	33.0	31.8	90.0	0	0	0		229,289	76,449	152,840	261,675	(108,835)	0
1/8/2008	2	5,277	45,070	72,576	122,923	39.7	36.1	90.0	0	0	0		233,495	76,449	157,046	261,675	(104,629)	0
1/9/2008	3	5,701	44,801	69,094	119,596	43.9	40.6	90.0	0	0	0		220,863	76,449	144,414	261,675	(117,261)	0
1/10/2008	4	4,948	40,861	69,330	115,139	35.9	33.3	90.0	0	0	0		234,012	76,449	157,563	261,675	(104,112)	0
1/11/2008	5	5,272	44,778	73,487	123,537	43.7	40.1	90.0	1	0	0		219,107	76,449	142,658	261,675	(119,017)	0
1/12/2008	6	5,465	42,892	73,626	121,983	44.9	41.5	90.0	0	1	0		211,314	76,449	134,865	261,675	(126,810)	0
1/13/2008	7	6,178	50,096	84,333	140,607	49.6	44.8	90.0	0	0	1		223,133	76,449	146,684	261,675	(114,991)	0
1/14/2008	1	7,097	62,757	108,259	178,113	62.1	54.5	90.0	0	0	0		239,405	76,449	162,956	261,675	(98,719)	0
1/15/2008	2	6,295	53,448	88,339	148,082	61.1	55.4	90.0	0	0	0		211,531	76,449	135,082	261,675	(126,593)	0
1/16/2008	3	6,915	56,088	90,384	153,387	52.1	46.4	90.0	0	0	0		236,751	76,449	160,302	261,675	(101,373)	0
1/17/2008	4	7,724	64,603	106,958	179,285	66.0	59.0	90.0	0	0	0		232,089	76,449	155,640	261,675	(106,035)	0
1/18/2008	5	8,541	71,626	118,783	198,950	74.1	64.2	90.0	1	0	0		227,639	76,449	151,190	261,675	(110,485)	0
1/19/2008	6	8,690	72,223	119,450	200,363	81.0	73.7	90.0	0	1	0		210,292	76,449	133,843	261,675	(127,832)	0
1/20/2008	7	8,490	66,651	108,482	183,623	76.0	71.1	90.0	0	0	1		208,104	76,449	131,655	261,675	(130,020)	0
1/21/2008	1	8,237	66,705	110,027	184,969	64.3	60.8	90.0	0	0	0		241,445	76,449	164,996	261,675	(96,679)	0
1/22/2008	2	8,197	66,281	107,529	182,007	72.8	65.1	90.0	0	0	0		219,845	76,449	143,396	261,675	(118,279)	0
1/23/2008	3	8,714	73,341	119,279	201,334	75.6	68.9	90.0	0	0	0		232,905	76,449	156,456	261,675	(105,219)	0
1/24/2008	4	8,096	68,161	113,671	189,928	77.7	71.8	90.0	0	0	0		217,066	76,449	140,617	261,675	(121,058)	0
1/25/2008	5	7,022	56,021	93,796	156,839	61.9	55.7	90.0	1	0	0		212,312	76,449	135,863	261,675	(125,812)	0
1/26/2008	6	6,889	49,203	83,931	140,023	52.8	48.4	90.0	0	1	0		211,970	76,449	135,521	261,675	(126,154)	0
1/27/2008	7	6,133	40,152	65,099	111,384	45.2	41.3	90.0	0	0	1		203,660	76,449	127,211	261,675	(134,464)	0
1/28/2008	1	5,669	40,675	65,847	112,191	32.6	28.7	90.0	0	0	0		238,411	76,449	161,962	261,675	(99,713)	0
1/29/2008	2	8,978	81,306	130,507	220,791	64.5	52.0	90.0	0	0	0		276,840	76,449	200,391	261,675	(61,284)	0
1/30/2008	3	8,882	74,002	117,634	200,518	81.7	73.0	90.0	0	0	0		218,809	76,449	142,360	261,675	(119,315)	0
1/31/2008	4	7,871	61,993	102,112	171,976	64.6	60.4	90.0	0	0	0		227,768	76,449	151,319	261,675	(110,356)	0

2/1/2008	5	6,331	46,997	76,309	129,637	51.0	47.4	90.0	1	0	0		209,033	76,449	132,584	261,675	(129,091)	0
2/2/2008	6	5,827	46,202	74,412	126,441	44.0	41.0	90.0	0	1	0		217,686	76,449	141,237	261,675	(120,438)	0
2/3/2008	7	5,940	46,898	75,298	128,136	47.2	43.6	90.0	0	0	1		215,920	76,449	139,471	261,675	(122,204)	0
2/4/2008	1	5,656	43,709	70,359	119,724	39.6	36.0	90.0	0	0	0		230,460	76,449	154,031	261,675	(107,644)	0
2/5/2008	2	6,076	45,310	76,612	127,998	40.0	36.3	90.0	0	0	0		237,794	76,449	161,345	261,675	(100,330)	0
2/6/2008	3	6,426	53,119	89,545	149,090	50.7	45.8	90.0	0	0	0		235,399	76,449	158,950	261,675	(102,725)	0
2/7/2008	4	6,389	51,211	86,773	144,373	56.1	52.6	90.0	0	0	0		218,794	76,449	142,345	261,675	(119,330)	0
2/8/2008	5	5,744	44,829	76,592	127,165	46.3	43.3	90.0	1	0	0		217,051	76,449	140,602	261,675	(121,073)	0
2/9/2008	6	7,928	66,558	109,899	184,385	65.3	56.1	90.0	0	1	0		228,819	76,449	152,370	261,675	(109,305)	0
2/10/2008	7	8,580	73,475	125,161	207,216	87.7	74.1	90.0	0	0	1		206,051	76,449	129,602	261,675	(132,073)	0
2/11/2008	1	7,639	65,651	113,215	186,505	70.7	65.8	90.0	0	0	0		228,902	76,449	152,453	261,675	(109,222)	0
2/12/2008	2	6,821	58,316	103,452	168,589	60.5	57.2	90.0	0	0	0		233,389	76,449	156,940	261,675	(104,735)	0
2/13/2008	3	6,816	52,392	90,549	149,757	59.6	54.9	90.0	0	0	0		216,655	76,449	140,206	261,675	(121,469)	0
2/14/2008	4	7,533	61,876	102,497	171,906	59.7	53.0	90.0	0	0	0		238,457	76,449	162,008	261,675	(99,667)	0
2/15/2008	5	7,545	61,155	100,553	169,253	68.2	63.3	90.0	1	0	0		210,997	76,449	134,548	261,675	(127,127)	0
2/16/2008	6	5,501	43,777	72,747	122,025	53.2	46.4	90.0	0	1	0		193,146	76,449	116,697	261,675	(144,978)	0
2/17/2008	7	5,966	50,329	84,153	140,448	45.1	39.0	90.0	0	0	1		232,838	76,449	156,389	261,675	(105,286)	0
2/18/2008	1	7,633	69,091	115,361	192,085	70.1	58.8	90.0	0	0	0		235,898	76,449	159,449	261,675	(102,226)	0
2/19/2008	2	7,777	68,613	115,747	192,137	71.4	65.6	90.0	0	0	0		233,044	76,449	156,595	261,675	(105,080)	0
2/20/2008	3	7,709	68,122	116,649	192,480	74.5	68.8	90.0	0	0	0		226,621	76,449	150,172	261,675	(111,503)	0
2/21/2008	4	6,838	58,939	106,889	172,666	65.4	61.9	90.0	0	0	0		226,657	76,449	150,208	261,675	(111,467)	0
2/22/2008	5	6,478	49,851	90,505	146,834	56.2	54.4	90.0	1	0	0		214,819	76,449	138,370	261,675	(123,305)	0
2/23/2008	6	5,627	42,567	77,975	126,169	51.6	48.8	90.0	0	1	0		200,633	76,449	124,184	261,675	(137,491)	0
2/24/2008	7	5,348	36,592	64,172	106,112	44.3	40.7	90.0	0	0	1		200,375	76,449	123,926	261,675	(137,749)	0
2/25/2008	1	5,606	45,037	76,691	127,334	37.6	34.8	90.0	0	0	0		242,491	76,449	166,042	261,675	(95,633)	0
2/26/2008	2	6,222	51,401	86,722	144,345	52.1	44.6	90.0	0	0	0		227,690	76,449	151,241	261,675	(110,434)	0
2/27/2008	3	6,274	48,948	87,464	142,686	53.3	48.7	90.0	0	0	0		223,278	76,449	146,829	261,675	(114,846)	0
2/28/2008	4	5,636	46,764	78,872	131,272	53.6	48.4	90.0	0	0	0		211,359	76,449	134,910	261,675	(126,765)	0
2/29/2008	5	6,374	47,257	74,219	127,850	49.1	41.7	90.0	1	0	0		211,426	76,449	134,977	261,675	(126,698)	0
12/1/2008	1	7,965	49,283	91,145	148,393	55.0	49.3	90.0	0	0	0		225,396	76,449	148,947	261,675	(112,728)	0
12/2/2008	2	7,152	39,709	74,165	121,026	42.6	37.4	90.0	0	0	0		225,184	76,449	148,735	261,675	(112,940)	0
12/3/2008	3	8,321	49,099	91,636	149,056	57.1	51.2	90.0	0	0	0		221,376	76,449	144,927	261,675	(116,748)	0
12/4/2008	4	9,172	56,118	101,096	166,386	60.2	54.1	90.0	0	0	0		231,961	76,449	155,512	261,675	(106,163)	0
12/5/2008	5	8,193	47,748	86,407	142,348	52.8	44.8	90.0	1	0	0		217,924	76,449	141,475	261,675	(120,200)	0
12/6/2008	6	9,155	53,830	102,793	165,778	63.6	56.7	90.0	0	1	0		213,940	76,449	137,491	261,675	(124,184)	0
12/7/2008	7	9,030	54,803	103,199	167,032	59.8	54.0	90.0	0	0	1		227,268	76,449	150,819	261,675	(110,856)	0
12/8/2008	1	8,089	50,753	91,897	150,739	50.9	44.8	90.0	0	0	0		236,726	76,449	160,277	261,675	(101,398)	0
12/9/2008	2	8,748	55,178	104,634	168,560	60.3	54.8	90.0	0	0	0		233,883	76,449	157,434	261,675	(104,241)	0
12/10/2008	3	8,597	51,714	92,500	152,811	57.7	50.3	90.0	0	0	0		223,773	76,449	147,324	261,675	(114,351)	0
12/11/2008	4	9,548	55,990	92,520	158,058	62.6	57.6	90.0	0	0	0		218,243	76,449	141,794	261,675	(119,881)	0
12/12/2008	5	9,104	51,116	87,512	147,732	55.6	49.1	90.0	1	0	0		217,054	76,449	140,605	261,675	(121,070)	0
12/13/2008	6	6,249	33,551	54,749	94,549	34.3	30.6	90.0	0	1	0		207,143	76,449	130,694	261,675	(130,981)	0
12/14/2008	7	9,071	58,464	106,682	174,217	59.8	48.2	90.0	0	0	1		234,498	76,449	158,049	261,675	(103,626)	0
12/15/2008	1	12,054	75,644	132,996	220,694	78.4	71.1	90.0	0	0	0		246,192	76,449	169,743	261,675	(91,932)	0
12/16/2008	2	10,913	68,906	122,459	202,278	70.4	65.5	90.0	0	0	0		245,387	76,449	168,938	261,675	(92,737)	0
12/17/2008	3	10,189	63,572	110,834	184,595	68.5	64.2	90.0	0	0	0		231,783	76,449	155,334	261,675	(106,341)	0
12/18/2008	4	9,196	55,655	98,466	163,317	59.3	55.1	90.0	0	0	0		230,776	76,449	154,327	261,675	(107,348)	0
12/19/2008	5	7,747	48,330	82,450	138,527	49.5	45.9	90.0	1	0	0		221,309	76,449	144,860	261,675	(116,815)	0
12/20/2008	6	9,240	63,556	107,625	180,421	70.8	59.8	90.0	0	1	0		212,770	76,449	136,321	261,675	(125,354)	0
12/21/2008	7	10,853	70,495	128,488	209,836	81.3	69.6	90.0	0	0	1		222,692	76,449	146,243	261,675	(115,432)	0
12/22/2008	1	10,464	66,290	117,464	194,218	71.9	65.1	90.0	0	0	0		233,965	76,449	157,516	261,675	(104,159)	0
12/23/2008	2	8,683	53,098	92,164	153,945	52.8	48.4	90.0	0	0	0		235,796	76,449	159,347	261,675	(102,328)	0
12/24/2008	3	9,484	59,664	104,551	173,699	70.0	63.1	90.0	0	0	0		217,753	76,449	141,304	261,675	(120,371)	0
12/25/2008	4	7,795	46,460	85,269	139,524	55.6	46.9	90.0	1	0	0		208,952	76,449	132,503	261,675	(129,172)	0
12/26/2008	5	5,851	35,092	60,180	101,123	35.0	31.0	90.0	0	1	0		212,131	76,449	135,682	261,675	(125,993)	0
12/27/2008	6	7,130	48,267	80,414	135,811	54.8	48.1	90.0	0	1	0		203,442	76,449	126,993	261,675	(134,682)	0
12/28/2008	7	7,309	42,184	71,425	120,918	48.0	43.1	90.0	0	0	1		206,967	76,449	130,518	261,675	(131,157)	0
12/29/2008	1	7,862	47,121	78,883	133,866	45.9	40.7	90.0	0	0	0		230,783	76,449	154,334	261,675	(107,341)	0
12/30/2008	2	9,807	60,975	101,576	172,358	67.7	59.2	90.0	0	0	0		221,396	76,449	144,947	261,675	(116,728)	0
12/31/2008	3	9,481	57,645	98,764	165,890	66.7	59.8	90.0	1	0	0		210,975	76,449	134,526	261,675	(127,149)	0

OES Attachment R-2
MERC-PNG's Revised Design Day Regression Output and the OES's Analysis of MERC-PNG's Northern Peak Day Calculations

1/1/2009	4	6,016	50,902	85,501	142,419	57.5	50.3	90.0	0	1	0		204,004	76,449	127,555	261,675	(134,120)	0
1/2/2009	5	6,170	53,424	93,020	152,614	60.2	55.0	90.0	1	0	0		211,875	76,449	135,426	261,675	(126,249)	0
1/3/2009	6	5,323	49,997	85,281	140,601	58.6	51.2	90.0	0	1	0		199,723	76,449	123,274	261,675	(138,401)	0
1/4/2009	7	7,142	64,083	103,882	175,107	70.0	63.3	90.0	0	0	1		212,843	76,449	136,394	261,675	(125,281)	0
1/5/2009	1	6,764	52,204	92,365	151,333	54.6	49.1	90.0	0	0	0		229,040	76,449	152,591	261,675	(109,084)	0
1/6/2009	2	5,873	52,079	85,956	143,908	53.0	48.5	90.0	0	0	0		225,184	76,449	148,735	261,675	(112,940)	0
1/7/2009	3	6,266	62,600	109,415	178,281	69.2	60.6	90.0	0	0	0		224,063	76,449	147,614	261,675	(114,061)	0
1/8/2009	4	6,584	58,068	95,448	160,100	63.0	58.8	90.0	0	0	0		219,478	76,449	143,029	261,675	(118,646)	0
1/9/2009	5	6,445	55,294	92,361	154,100	59.7	54.2	90.0	1	0	0		214,491	76,449	138,042	261,675	(123,633)	0
1/10/2009	6	6,439	51,787	87,338	145,564	58.0	54.8	90.0	0	1	0		206,087	76,449	129,638	261,675	(132,037)	0
1/11/2009	7	6,110	55,771	91,825	153,706	59.4	55.3	90.0	0	0	1		214,809	76,449	138,360	261,675	(123,315)	0
1/12/2009	1	7,371	67,552	108,077	183,000	75.2	65.4	90.0	0	0	0		215,540	76,449	139,091	261,675	(122,584)	0
1/13/2009	2	8,058	72,440	119,786	200,284	81.9	75.6	90.0	0	0	0		218,018	76,449	141,569	261,675	(120,106)	0
1/14/2009	3	8,528	78,886	131,100	218,514	88.7	77.8	90.0	0	0	0		221,375	76,449	144,926	261,675	(116,749)	0
1/15/2009	4	8,587	81,553	134,721	224,861	86.8	80.2	90.0	0	0	0		231,948	76,449	155,499	261,675	(106,176)	0
1/16/2009	5	7,389	65,149	111,220	183,758	73.9	64.8	90.0	1	0	0		212,855	76,449	136,406	261,675	(125,269)	0
1/17/2009	6	6,445	52,824	89,417	148,686	56.0	49.8	90.0	0	1	0		213,695	76,449	137,246	261,675	(124,429)	0
1/18/2009	7	5,958	51,253	86,039	143,250	54.0	50.0	90.0	0	0	1		216,256	76,449	139,807	261,675	(121,868)	0
1/19/2009	1	5,851	54,054	91,797	151,702	56.5	52.0	90.0	0	0	0		225,386	76,449	148,937	261,675	(112,738)	0
1/20/2009	2	5,594	50,680	87,025	143,299	55.4	51.4	90.0	0	0	0		219,306	76,449	142,857	261,675	(118,818)	0
1/21/2009	3	5,226	48,817	84,360	138,403	52.6	49.9	90.0	0	0	0		220,535	76,449	144,086	261,675	(117,589)	0
1/22/2009	4	5,349	48,973	79,390	133,712	50.4	46.7	90.0	0	0	0		220,726	76,449	144,277	261,675	(117,398)	0
1/23/2009	5	6,975	64,678	110,469	182,122	72.4	62.1	90.0	1	0	0		214,614	76,449	138,165	261,675	(123,510)	0
1/24/2009	6	7,704	68,019	111,069	186,792	77.8	70.7	90.0	0	1	0		203,892	76,449	127,443	261,675	(134,232)	0
1/25/2009	7	7,824	66,772	105,009	179,605	68.2	63.2	90.0	0	0	1		221,277	76,449	144,828	261,675	(116,847)	0
1/26/2009	1	8,023	70,520	111,032	189,575	67.6	63.6	90.0	0	0	0		238,912	76,449	162,463	261,675	(99,212)	0
1/27/2009	2	7,496	66,047	107,512	181,055	65.9	62.4	90.0	0	0	0		233,941	76,449	157,492	261,675	(104,183)	0
1/28/2009	3	6,386	56,545	94,894	157,825	60.1	54.1	90.0	0	0	0		223,461	76,449	147,012	261,675	(114,663)	0
1/29/2009	4	6,685	60,538	99,842	167,065	68.9	61.0	90.0	0	0	0		213,498	76,449	137,047	261,675	(124,628)	0
1/30/2009	5	6,112	49,784	86,125	142,021	58.6	53.9	90.0	1	0	0		204,821	76,449	128,372	261,675	(133,303)	0
1/31/2009	6	4,349	35,456	60,430	100,235	37.9	32.6	90.0	0	1	0		205,010	76,449	128,561	261,675	(133,114)	0
2/1/2009	7	4,973	44,132	72,319	121,424	51.4	43.9	90.0	0	0	1		200,169	76,449	123,720	261,675	(137,955)	0
2/2/2009	1	7,101	65,661	107,656	180,418	72.5	62.5	90.0	0	0	0		218,870	76,449	142,421	261,675	(119,254)	0
2/3/2009	2	7,316	66,475	111,862	185,653	69.9	64.4	90.0	0	0	0		229,761	76,449	153,312	261,675	(108,363)	0
2/4/2009	3	6,759	59,275	100,252	166,286	65.2	59.0	90.0	0	0	0		220,851	76,449	144,402	261,675	(117,273)	0
2/5/2009	4	5,448	44,568	78,406	128,420	46.3	43.3	90.0	0	0	0		224,364	76,449	147,915	261,675	(113,760)	0
2/6/2009	5	4,231	35,112	59,016	98,359	39.2	34.5	90.0	1	0	0		203,725	76,449	127,276	261,675	(134,399)	0
2/7/2009	6	4,690	39,702	62,696	107,088	43.6	38.9	90.0	0	1	0		199,293	76,449	122,844	261,675	(138,831)	0
2/8/2009	7	4,323	36,049	60,082	100,454	41.4	37.7	90.0	0	0	1		201,115	76,449	124,666	261,675	(137,009)	0
2/9/2009	1	3,763	34,886	57,371	96,020	30.1	24.9	90.0	0	0	0		227,568	76,449	151,119	261,675	(110,556)	0
2/10/2009	2	3,948	36,282	58,222	96,452	31.6	27.3	90.0	0	0	0		224,856	76,449	148,407	261,675	(113,268)	0
2/11/2009	3	4,118	40,068	67,572	111,758	38.6	33.0	90.0	0	0	0		224,736	76,449	148,287	261,675	(113,388)	0
2/12/2009	4	4,892	45,411	71,325	121,628	44.6	39.3	90.0	0	0	0		221,296	76,449	144,847	261,675	(116,828)	0
2/13/2009	5	5,113	47,458	79,618	132,189	51.5	46.9	90.0	1	0	0		210,613	76,449	134,164	261,675	(127,511)	0
2/14/2009	6	5,972	48,493	79,697	134,162	53.5	49.0	90.0	0	1	0		204,466	76,449	128,017	261,675	(133,658)	0
2/15/2009	7	5,496	46,161	79,766	131,423	50.1	47.4	90.0	0	0	1		212,913	76,449	136,464	261,675	(125,211)	0
2/16/2009	1	4,631	40,355	74,763	119,749	41.8	36.5	90.0	0	0	0		225,751	76,449	149,302	261,675	(112,373)	0
2/17/2009	2	4,383	36,346	61,823	102,552	34.8	31.9	90.0	0	0	0		223,842	76,449	147,393	261,675	(114,282)	0
2/18/2009	3	6,207	54,393	94,701	155,291	60.4	51.3	90.0	0	0	0		220,430	76,449	143,981	261,675	(117,694)	0
2/19/2009	4	6,316	54,169	94,231	154,716	59.6	55.3	90.0	0	0	0		221,542	76,449	145,093	261,675	(116,582)	0
2/20/2009	5	5,377	44,956	75,362	125,695	50.0	45.2	90.0	1	0	0		207,466	76,449	131,017	261,675	(130,658)	0
2/21/2009	6	5,718	51,291	88,789	145,798	63.9	55.3	90.0	0	1	0		193,410	76,449	116,961	261,675	(144,714)	0
2/22/2009	7	6,093	53,969	95,562	155,624	60.8	58.5	90.0	0	0	1		213,708	76,449	137,259	261,675	(124,416)	0
2/23/2009	1	5,580	50,266	84,375	140,221	58.2	52.3	90.0	0	0	0		210,020	76,449	133,571	261,675	(128,104)	0
2/24/2009	2	4,061	34,616	59,244	97,921	38.6	34.3	90.0	0	0	0		210,881	76,449	134,432	261,675	(127,243)	0
2/25/2009	3	4,875	38,146	61,243	104,264	37.9	34.3	90.0	0	0	0		218,787	76,449	142,338	261,675	(119,337)	0
2/26/2009	4	6,394	52,901	86,662	145,957	54.6	46.9	90.0	0	0	0		223,686	76,449	147,237	261,675	(114,438)	0
2/27/2009	5	6,862	54,593	93,143	154,598	61.7	56.9	90.0	1	0	0		210,577	76,449	134,128	261,675	(127,547)	0
2/28/2009	6	6,328	52,661	91,161	150,150	63.2	56.8	90.0	0	1	0		199,336	76,449	122,887	261,675	(138,788)	0

OES Attachment R-3

MERC-PNG's Design Day Regression Output and the OES's Analysis of MERC-PNG's Viking Peak Day Calculations

MERC-PNG's Regression Output and OES's Analysis of MERC-PNG's Peak Day Calculations

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.918193817
R Square	0.843079886
Adjusted R Square	0.840720185
Standard Error	525.3635614
Observations	271

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	394449712.6	98612428	357.283	1.199E-105
Residual	266	73417827.85	276006.87		
Total	270	467867540.4			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	1,141.6855	143.0241	7.9825	0.0000	860.0821863	1423.288798	860.0821863	1423.288798
AHDD65	77.5807	2.1548	36.0044	0.0000	73.33811495	81.82320372	73.33811495	81.82320372
Sat	(280.8111)	87.5062	(3.2090)	0.0015	-453.1039541	-108.518297	-453.1039541	-108.5182968
Sun	(249.6543)	91.6436	(2.7242)	0.0069	-430.0933295	-69.2152061	-430.0933295	-69.2152061
Dec	(182.8834)	68.7716	(2.6593)	0.0083	-318.2893172	-47.4775501	-318.2893172	-47.47755011

PNG-VGT Peak Day Regression for Winter 2010							Mcf Usage per HDD	77.58
1	2	3	5	22	23	24	Peak Day Temperature	108.6
	(Mon=1)	Total	Fargo				Days above Peak	1

Date	Day	Daily Meter	AHDD65	Sat	Sun	Dec	Estimated Peak Day Use	Estimated Interruptible Use	Estimated Firm Use	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	5,335	50	0	0	1	9,720	3,329	6,391	7,625	(1,234)	0
12/2/2006	6	6,063	66	1	0	1	8,898	3,329	5,569	7,625	(2,056)	0
12/3/2006	7	5,940	62	0	1	1	9,111	3,329	5,782	7,625	(1,843)	0
12/4/2006	1	6,439	60	0	0	1	9,994	3,329	6,665	7,625	(960)	0
12/5/2006	2	5,269	46	0	0	1	9,912	3,329	6,583	7,625	(1,042)	0
12/6/2006	3	7,089	64	0	0	1	10,382	3,329	7,053	7,625	(572)	0
12/7/2006	4	6,356	69	0	0	1	9,259	3,329	5,930	7,625	(1,695)	0
12/8/2006	5	4,235	44	0	0	1	9,033	3,329	5,704	7,625	(1,921)	0
12/9/2006	6	3,523	31	1	0	1	9,077	3,329	5,748	7,625	(1,877)	0
12/10/2006	7	3,430	38	0	1	1	8,495	3,329	5,166	7,625	(2,459)	0
12/11/2006	1	3,729	38	0	0	1	9,039	3,329	5,710	7,625	(1,915)	0
12/12/2006	2	4,041	36	0	0	1	9,487	3,329	6,158	7,625	(1,467)	0
12/13/2006	3	3,489	34	0	0	1	9,062	3,329	5,733	7,625	(1,892)	0
12/14/2006	4	4,092	34	0	0	1	9,681	3,329	6,352	7,625	(1,273)	0
12/15/2006	5	4,166	39	0	0	1	9,367	3,329	6,038	7,625	(1,587)	0
12/16/2006	6	3,556	32	1	0	1	8,998	3,329	5,669	7,625	(1,956)	0
12/17/2006	7	4,504	44	0	1	1	9,047	3,329	5,718	7,625	(1,907)	0
12/18/2006	1	4,518	46	0	0	1	9,209	3,329	5,880	7,625	(1,745)	0
12/19/2006	2	3,971	40	0	0	1	9,118	3,329	5,789	7,625	(1,836)	0
12/20/2006	3	4,429	38	0	0	1	9,686	3,329	6,357	7,625	(1,268)	0
12/21/2006	4	4,075	44	0	0	1	8,929	3,329	5,600	7,625	(2,025)	0
12/22/2006	5	3,785	38	0	0	1	9,042	3,329	5,713	7,625	(1,912)	0
12/23/2006	6	3,728	36	1	0	1	8,867	3,329	5,538	7,625	(2,087)	0
12/24/2006	7	3,795	36	1	0	1	8,926	3,329	5,597	7,625	(2,028)	0
12/25/2006	1	4,139	49	0	1	1	8,349	3,329	5,020	7,625	(2,605)	0
12/26/2006	2	3,863	36	0	0	1	9,315	3,329	5,986	7,625	(1,639)	0
12/27/2006	3	3,660	31	0	0	1	9,518	3,329	6,189	7,625	(1,436)	0
12/28/2006	4	3,845	34	0	0	1	9,431	3,329	6,102	7,625	(1,523)	0
12/29/2006	5	3,670	37	0	0	1	9,034	3,329	5,705	7,625	(1,920)	0
12/30/2006	6	3,527	39	1	0	1	8,500	3,329	5,171	7,625	(2,454)	0
12/31/2006	7	4,517	48	1	0	1	8,764	3,329	5,435	7,625	(2,190)	0

OES Attachment R-3
MERC-PNG's Design Day Regression Output and the OES's Analysis of MERC-PNG's Viking Peak Day Calculations

12/1/2007	6	5,050	53	1	0	1	8,868	3,329	5,539	7,625	(2,086)	0
12/2/2007	7	6,107	71	0	1	1	8,626	3,329	5,297	7,625	(2,328)	0
12/3/2007	1	5,687	64	0	0	1	8,960	3,329	5,631	7,625	(1,994)	0
12/4/2007	2	5,779	53	0	0	1	9,925	3,329	6,596	7,625	(1,029)	0
12/5/2007	3	6,316	73	0	0	1	8,914	3,329	5,585	7,625	(2,040)	0
12/6/2007	4	6,062	63	0	0	1	9,440	3,329	6,111	7,625	(1,514)	0
12/7/2007	5	6,785	77	0	0	1	9,023	3,329	5,694	7,625	(1,931)	0
12/8/2007	6	6,900	79	1	0	1	8,730	3,329	5,401	7,625	(2,224)	0
12/9/2007	7	6,516	78	0	1	1	8,420	3,329	5,091	7,625	(2,534)	0
12/10/2007	1	5,796	63	0	0	1	9,130	3,329	5,801	7,625	(1,824)	0
12/11/2007	2	5,816	63	0	0	1	9,206	3,329	5,877	7,625	(1,748)	0
12/12/2007	3	5,280	58	0	0	1	9,012	3,329	5,683	7,625	(1,942)	0
12/13/2007	4	6,881	60	0	0	1	10,455	3,329	7,126	7,625	(499)	0
12/14/2007	5	6,363	72	0	0	1	9,044	3,329	5,715	7,625	(1,910)	0
12/15/2007	6	5,119	56	1	0	1	8,775	3,329	5,446	7,625	(2,179)	0
12/16/2007	7	5,198	57	0	1	1	8,750	3,329	5,421	7,625	(2,204)	0
12/17/2007	1	4,816	55	0	0	1	8,825	3,329	5,496	7,625	(2,129)	0
12/18/2007	2	5,034	53	0	0	1	9,203	3,329	5,874	7,625	(1,751)	0
12/19/2007	3	4,896	52	0	0	1	9,079	3,329	5,750	7,625	(1,875)	0
12/20/2007	4	4,646	48	0	0	1	9,185	3,329	5,856	7,625	(1,769)	0
12/21/2007	5	4,285	47	0	0	1	8,911	3,329	5,582	7,625	(2,043)	0
12/22/2007	6	5,648	60	1	0	1	8,922	3,329	5,593	7,625	(2,032)	0
12/23/2007	7	6,288	68	0	1	1	8,974	3,329	5,645	7,625	(1,980)	0
12/24/2007	1	4,801	57	0	1	1	8,402	3,329	5,073	7,625	(2,552)	0
12/25/2007	2	4,339	43	1	0	1	8,949	3,329	5,620	7,625	(2,005)	0
12/26/2007	3	4,732	54	0	0	1	8,780	3,329	5,451	7,625	(2,174)	0
12/27/2007	4	4,946	52	0	0	1	9,154	3,329	5,825	7,625	(1,800)	0
12/28/2007	5	4,666	49	0	0	1	9,116	3,329	5,787	7,625	(1,838)	0
12/29/2007	6	4,698	51	1	0	1	8,675	3,329	5,346	7,625	(2,279)	0
12/30/2007	7	4,774	54	0	1	1	8,585	3,329	5,256	7,625	(2,369)	0
12/31/2007	1	6,043	62	0	1	1	9,257	3,329	5,928	7,625	(1,697)	0
1/1/2008	2	7,047	77	1	0	0	9,230	3,329	5,901	7,625	(1,724)	0
1/2/2008	3	6,254	68	0	0	0	9,388	3,329	6,059	7,625	(1,566)	0
1/3/2008	4	5,142	52	0	0	0	9,499	3,329	6,170	7,625	(1,455)	0
1/4/2008	5	4,909	51	0	0	0	9,409	3,329	6,080	7,625	(1,545)	0
1/5/2008	6	3,947	46	1	0	0	8,554	3,329	5,225	7,625	(2,400)	0
1/6/2008	7	3,553	35	0	1	0	9,023	3,329	5,694	7,625	(1,931)	0
1/7/2008	1	3,867	36	0	0	0	9,470	3,329	6,141	7,625	(1,484)	0
1/8/2008	2	4,951	49	0	0	0	9,593	3,329	6,264	7,625	(1,361)	0
1/9/2008	3	4,750	48	0	0	0	9,428	3,329	6,099	7,625	(1,526)	0
1/10/2008	4	4,972	48	0	0	0	9,676	3,329	6,347	7,625	(1,278)	0
1/11/2008	5	5,041	50	0	0	0	9,556	3,329	6,227	7,625	(1,398)	0
1/12/2008	6	5,056	57	1	0	0	8,760	3,329	5,431	7,625	(2,194)	0
1/13/2008	7	6,503	67	0	1	0	9,465	3,329	6,136	7,625	(1,489)	0
1/14/2008	1	7,670	80	0	0	0	9,928	3,329	6,599	7,625	(1,026)	0
1/15/2008	2	5,961	68	0	0	0	9,077	3,329	5,748	7,625	(1,877)	0
1/16/2008	3	7,017	64	0	0	0	10,490	3,329	7,161	7,625	(464)	0
1/17/2008	4	7,039	72	0	0	0	9,851	3,329	6,522	7,625	(1,103)	0
1/18/2008	5	8,296	81	0	0	0	10,409	3,329	7,080	7,625	(545)	0
1/19/2008	6	8,050	85	1	0	0	9,616	3,329	6,287	7,625	(1,338)	0
1/20/2008	7	7,537	82	0	1	0	9,320	3,329	5,991	7,625	(1,634)	0
1/21/2008	1	7,473	71	0	0	0	10,388	3,329	7,059	7,625	(566)	0
1/22/2008	2	7,554	71	0	0	0	10,468	3,329	7,139	7,625	(486)	0
1/23/2008	3	8,307	81	0	0	0	10,448	3,329	7,119	7,625	(506)	0
1/24/2008	4	7,122	75	0	0	0	9,726	3,329	6,397	7,625	(1,228)	0
1/25/2008	5	5,839	62	0	0	0	9,458	3,329	6,129	7,625	(1,496)	0
1/26/2008	6	5,280	60	1	0	0	8,737	3,329	5,408	7,625	(2,217)	0
1/27/2008	7	4,130	48	0	1	0	8,551	3,329	5,222	7,625	(2,403)	0
1/28/2008	1	5,343	48	0	0	0	10,021	3,329	6,692	7,625	(933)	0
1/29/2008	**2**	**9,192**	**85**	**0**	**0**	**0**	**11,046**	**3,329**	**7,717**	**7,625**	**92**	**1**
1/30/2008	3	8,515	87	0	0	0	10,197	3,329	6,868	7,625	(757)	0
1/31/2008	4	7,244	74	0	0	0	9,959	3,329	6,630	7,625	(995)	0

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1/1/2007	1	4,731	55	0	1	0	8,673	3,329	5,344	7,625	(2,281)	0
1/2/2007	2	4,354	51	0	0	0	8,834	3,329	5,505	7,625	(2,120)	0
1/3/2007	3	3,825	38	0	0	0	9,296	3,329	5,967	7,625	(1,658)	0
1/4/2007	4	3,817	34	0	0	0	9,636	3,329	6,307	7,625	(1,318)	0
1/5/2007	5	3,871	39	0	0	0	9,309	3,329	5,980	7,625	(1,645)	0
1/6/2007	6	3,987	44	1	0	0	8,743	3,329	5,414	7,625	(2,211)	0
1/7/2007	7	4,871	45	0	1	0	9,540	3,329	6,211	7,625	(1,414)	0
1/8/2007	1	5,105	51	0	0	0	9,583	3,329	6,254	7,625	(1,371)	0
1/9/2007	2	5,443	56	0	0	0	9,511	3,329	6,182	7,625	(1,443)	0
1/10/2007	3	4,747	47	0	0	0	9,514	3,329	6,185	7,625	(1,440)	0
1/11/2007	4	7,242	69	0	0	0	10,313	3,329	6,984	7,625	(641)	0
1/12/2007	5	7,647	87	0	0	0	9,322	3,329	5,993	7,625	(1,632)	0
1/13/2007	6	6,395	75	1	0	0	8,705	3,329	5,376	7,625	(2,249)	0
1/14/2007	7	6,592	79	0	1	0	8,665	3,329	5,336	7,625	(2,289)	0
1/15/2007	1	7,159	78	0	0	0	9,524	3,329	6,195	7,625	(1,430)	0
1/16/2007	2	6,272	71	0	0	0	9,223	3,329	5,894	7,625	(1,731)	0
1/17/2007	3	5,909	51	0	0	0	10,389	3,329	7,060	7,625	(565)	0
1/18/2007	4	5,788	48	0	0	0	10,477	3,329	7,148	7,625	(477)	0
1/19/2007	5	5,663	61	0	0	0	9,364	3,329	6,035	7,625	(1,590)	0
1/20/2007	6	4,769	50	1	0	0	9,022	3,329	5,693	7,625	(1,932)	0
1/21/2007	7	5,097	53	0	1	0	9,129	3,329	5,800	7,625	(1,825)	0
1/22/2007	1	5,172	51	0	0	0	9,636	3,329	6,307	7,625	(1,318)	0
1/23/2007	2	5,093	52	0	0	0	9,451	3,329	6,122	7,625	(1,503)	0
1/24/2007	3	5,373	48	0	0	0	10,098	3,329	6,769	7,625	(856)	0
1/25/2007	4	4,987	56	0	0	0	9,107	3,329	5,778	7,625	(1,847)	0
1/26/2007	5	4,813	41	0	0	0	10,026	3,329	6,697	7,625	(928)	0
1/27/2007	6	7,107	68	1	0	0	9,951	3,329	6,622	7,625	(1,003)	0
1/28/2007	7	6,205	69	0	1	0	9,004	3,329	5,675	7,625	(1,950)	0
1/29/2007	1	7,322	67	0	0	0	10,529	3,329	7,200	7,625	(425)	0
1/30/2007	2	6,623	75	0	0	0	9,227	3,329	5,898	7,625	(1,727)	0
1/31/2007	3	6,707	68	0	0	0	9,832	3,329	6,503	7,625	(1,122)	0
2/1/2007	4	7,584	75	0	0	0	10,223	3,329	6,894	7,625	(731)	0
2/2/2007	5	7,809	79	0	0	0	10,132	3,329	6,803	7,625	(822)	0
2/3/2007	6	8,240	89	1	0	0	9,472	3,329	6,143	7,625	(1,482)	0
2/4/2007	7	8,354	85	0	1	0	9,931	3,329	6,602	7,625	(1,023)	0
2/5/2007	1	7,865	81	0	0	0	10,022	3,329	6,693	7,625	(932)	0
2/6/2007	2	7,837	78	0	0	0	10,230	3,329	6,901	7,625	(724)	0
2/7/2007	3	8,205	86	0	0	0	9,951	3,329	6,622	7,625	(1,003)	0
2/8/2007	4	7,951	80	0	0	0	10,185	3,329	6,856	7,625	(769)	0
2/9/2007	5	7,738	80	0	0	0	9,972	3,329	6,643	7,625	(982)	0
2/10/2007	6	6,448	77	1	0	0	8,644	3,329	5,315	7,625	(2,310)	0
2/11/2007	7	5,861	60	0	1	0	9,345	3,329	6,016	7,625	(1,609)	0
2/12/2007	1	6,979	77	0	0	0	9,427	3,329	6,098	7,625	(1,527)	0
2/13/2007	2	7,701	83	0	0	0	9,726	3,329	6,397	7,625	(1,228)	0
2/14/2007	3	7,672	77	0	0	0	10,120	3,329	6,791	7,625	(834)	0
2/15/2007	4	7,040	80	0	0	0	9,241	3,329	5,912	7,625	(1,713)	0
2/16/2007	5	5,858	59	0	0	0	9,678	3,329	6,349	7,625	(1,276)	0
2/17/2007	6	5,458	53	1	0	0	9,459	3,329	6,130	7,625	(1,495)	0
2/18/2007	7	5,424	54	0	1	0	9,424	3,329	6,095	7,625	(1,530)	0
2/19/2007	1	5,055	46	0	0	0	9,950	3,329	6,621	7,625	(1,004)	0
2/20/2007	2	4,155	42	0	0	0	9,337	3,329	6,008	7,625	(1,617)	0
2/21/2007	3	5,266	40	0	0	0	10,569	3,329	7,240	7,625	(385)	0
2/22/2007	4	4,847	49	0	0	0	9,444	3,329	6,115	7,625	(1,510)	0
2/23/2007	5	5,025	40	0	0	0	10,352	3,329	7,023	7,625	(602)	0
2/24/2007	6	4,561	42	1	0	0	9,462	3,329	6,133	7,625	(1,492)	0
2/25/2007	7	4,332	43	0	1	0	9,179	3,329	5,850	7,625	(1,775)	0
2/26/2007	1	4,485	43	0	0	0	9,590	3,329	6,261	7,625	(1,364)	0
2/27/2007	2	4,587	46	0	0	0	9,428	3,329	6,099	7,625	(1,526)	0
2/28/2007	3	4,596	42	0	0	0	9,778	3,329	6,449	7,625	(1,176)	0

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2/1/2008	5	5,446	55	0	0	0	9,642	3,329	6,313	7,625	(1,312)	0
2/2/2008	6	5,906	56	1	0	0	9,698	3,329	6,369	7,625	(1,256)	0
2/3/2008	7	4,908	47	0	1	0	9,467	3,329	6,138	7,625	(1,487)	0
2/4/2008	1	5,000	51	0	0	0	9,480	3,329	6,151	7,625	(1,474)	0
2/5/2008	2	6,588	72	0	0	0	9,403	3,329	6,074	7,625	(1,551)	0
2/6/2008	3	5,756	69	0	0	0	8,836	3,329	5,507	7,625	(2,118)	0
2/7/2008	4	5,025	56	0	0	0	9,093	3,329	5,764	7,625	(1,861)	0
2/8/2008	5	4,947	47	0	0	0	9,707	3,329	6,378	7,625	(1,247)	0
2/9/2008	6	8,062	71	1	0	0	10,668	3,329	7,339	7,625	(286)	0
2/10/2008	7	8,235	91	0	1	0	9,349	3,329	6,020	7,625	(1,605)	0
2/11/2008	1	7,354	77	0	0	0	9,837	3,329	6,508	7,625	(1,117)	0
2/12/2008	2	6,220	61	0	0	0	9,911	3,329	6,582	7,625	(1,043)	0
2/13/2008	3	6,526	65	0	0	0	9,912	3,329	6,583	7,625	(1,042)	0
2/14/2008	4	7,753	79	0	0	0	10,042	3,329	6,713	7,625	(912)	0
2/15/2008	5	6,763	69	0	0	0	9,812	3,329	6,483	7,625	(1,142)	0
2/16/2008	6	4,408	46	1	0	0	8,958	3,329	5,629	7,625	(1,996)	0
2/17/2008	7	6,585	57	0	1	0	10,366	3,329	7,037	7,625	(588)	0
2/18/2008	1	7,837	83	0	0	0	9,854	3,329	6,525	7,625	(1,100)	0
2/19/2008	2	8,408	90	0	0	0	9,874	3,329	6,545	7,625	(1,080)	0
2/20/2008	3	8,011	89	0	0	0	9,512	3,329	6,183	7,625	(1,442)	0
2/21/2008	4	6,062	71	0	0	0	8,976	3,329	5,647	7,625	(1,978)	0
2/22/2008	5	5,316	56	0	0	0	9,426	3,329	6,097	7,625	(1,528)	0
2/23/2008	6	4,413	56	1	0	0	8,241	3,329	4,912	7,625	(2,713)	0
2/24/2008	7	4,305	47	0	1	0	8,815	3,329	5,486	7,625	(2,139)	0
2/25/2008	1	5,350	59	0	0	0	9,186	3,329	5,857	7,625	(1,768)	0
2/26/2008	2	5,357	51	0	0	0	9,844	3,329	6,515	7,625	(1,110)	0
2/27/2008	3	4,988	54	0	0	0	9,258	3,329	5,929	7,625	(1,696)	0
2/28/2008	4	4,697	46	0	0	0	9,528	3,329	6,199	7,625	(1,426)	0
2/29/2008	5	5,402	53	0	0	0	9,694	3,329	6,365	7,625	(1,260)	0
12/1/2008	1	1,582	53	0	0	1	5,741	3,329	2,412	7,625	(5,213)	0
12/2/2008	2	4,779	48	0	0	1	9,274	3,329	5,945	7,625	(1,680)	0
12/3/2008	3	5,494	56	0	0	1	9,431	3,329	6,102	7,625	(1,523)	0
12/4/2008	4	6,054	62	0	0	1	9,517	3,329	6,188	7,625	(1,437)	0
12/5/2008	5	5,436	60	0	0	1	9,062	3,329	5,733	7,625	(1,892)	0
12/6/2008	6	6,098	66	1	0	1	8,901	3,329	5,572	7,625	(2,053)	0
12/7/2008	7	5,458	56	0	1	1	9,098	3,329	5,769	7,625	(1,856)	0
12/8/2008	1	5,614	63	0	0	1	8,992	3,329	5,663	7,625	(1,962)	0
12/9/2008	2	6,011	62	0	0	1	9,478	3,329	6,149	7,625	(1,476)	0
12/10/2008	3	5,876	50	0	0	1	10,243	3,329	6,914	7,625	(711)	0
12/11/2008	4	6,902	70	0	0	1	9,749	3,329	6,420	7,625	(1,205)	0
12/12/2008	5	5,342	55	0	0	1	9,317	3,329	5,988	7,625	(1,637)	0
12/13/2008	6	4,945	70	1	0	1	7,467	3,329	4,138	7,625	(3,487)	0
12/14/2008	7	7,109	97	0	1	1	7,614	3,329	4,285	7,625	(3,340)	0
12/15/2008	1	8,082	89	0	0	1	9,435	3,329	6,106	7,625	(1,519)	0
12/16/2008	2	7,300	77	0	0	1	9,569	3,329	6,240	7,625	(1,385)	0
12/17/2008	3	7,204	77	0	0	1	9,497	3,329	6,168	7,625	(1,457)	0
12/18/2008	4	6,650	75	0	0	1	9,037	3,329	5,708	7,625	(1,917)	0
12/19/2008	5	5,520	60	0	0	1	9,075	3,329	5,746	7,625	(1,879)	0
12/20/2008	6	6,745	83	1	0	1	8,244	3,329	4,915	7,625	(2,710)	0
12/21/2008	7	7,241	84	0	1	1	8,746	3,329	5,417	7,625	(2,208)	0
12/22/2008	1	6,847	75	0	0	1	9,303	3,329	5,974	7,625	(1,651)	0
12/23/2008	2	5,853	64	0	0	1	9,115	3,329	5,786	7,625	(1,839)	0
12/24/2008	3	6,094	76	0	0	1	8,448	3,329	5,119	7,625	(2,506)	0
12/25/2008	4	4,765	58	0	0	1	8,508	3,329	5,179	7,625	(2,446)	0
12/26/2008	5	3,786	46	1	0	1	8,153	3,329	4,824	7,625	(2,801)	0
12/27/2008	6	5,240	64	1	0	1	8,212	3,329	4,883	7,625	(2,742)	0
12/28/2008	7	4,832	56	0	1	1	8,480	3,329	5,151	7,625	(2,474)	0
12/29/2008	1	5,387	60	0	0	1	8,937	3,329	5,608	7,625	(2,017)	0
12/30/2008	2	6,667	82	0	0	1	8,566	3,329	5,237	7,625	(2,388)	0
12/31/2008	3	5,961	75	0	0	1	8,354	3,329	5,025	7,625	(2,600)	0

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1/1/2009	4	5,705	67	1	0	0	8,677	3,329	5,348	7,625	(2,277)	0
1/2/2009	5	5,554	66	0	0	0	8,833	3,329	5,504	7,625	(2,121)	0
1/3/2009	6	5,384	72	1	0	0	7,967	3,329	4,638	7,625	(2,987)	0
1/4/2009	7	6,754	83	0	1	0	8,455	3,329	5,126	7,625	(2,499)	0
1/5/2009	1	6,107	73	0	0	0	8,884	3,329	5,555	7,625	(2,070)	0
1/6/2009	2	5,927	70	0	0	0	8,927	3,329	5,598	7,625	(2,027)	0
1/7/2009	3	6,915	72	0	0	0	9,727	3,329	6,398	7,625	(1,227)	0
1/8/2009	4	6,300	67	0	0	0	9,512	3,329	6,183	7,625	(1,442)	0
1/9/2009	5	6,166	69	0	0	0	9,264	3,329	5,935	7,625	(1,690)	0
1/10/2009	6	5,692	67	1	0	0	8,623	3,329	5,294	7,625	(2,331)	0
1/11/2009	7	5,644	60	0	1	0	9,169	3,329	5,840	7,625	(1,785)	0
1/12/2009	1	7,582	84	0	0	0	9,490	3,329	6,161	7,625	(1,464)	0
1/13/2009	2	7,924	90	0	0	0	9,398	3,329	6,069	7,625	(1,556)	0
1/14/2009	3	8,661	92	0	0	0	9,947	3,329	6,618	7,625	(1,007)	0
1/15/2009	4	8,564	94	0	0	0	9,717	3,329	6,388	7,625	(1,237)	0
1/16/2009	5	6,670	70	0	0	0	9,649	3,329	6,320	7,625	(1,305)	0
1/17/2009	6	4,909	50	1	0	0	9,152	3,329	5,823	7,625	(1,802)	0
1/18/2009	7	4,904	51	0	1	0	9,154	3,329	5,825	7,625	(1,800)	0
1/19/2009	1	5,450	50	0	0	0	10,018	3,329	6,689	7,625	(936)	0
1/20/2009	2	5,112	54	0	0	0	9,356	3,329	6,027	7,625	(1,598)	0
1/21/2009	3	4,973	54	0	0	0	9,244	3,329	5,915	7,625	(1,710)	0
1/22/2009	4	5,295	64	0	0	0	8,723	3,329	5,394	7,625	(2,231)	0
1/23/2009	5	7,053	84	0	0	0	8,961	3,329	5,632	7,625	(1,993)	0
1/24/2009	6	7,043	84	1	0	0	8,643	3,329	5,314	7,625	(2,311)	0
1/25/2009	7	7,149	83	0	1	0	8,898	3,329	5,569	7,625	(2,056)	0
1/26/2009	1	7,374	83	0	0	0	9,348	3,329	6,019	7,625	(1,606)	0
1/27/2009	2	6,596	77	0	0	0	9,026	3,329	5,697	7,625	(1,928)	0
1/28/2009	3	6,015	63	0	0	0	9,576	3,329	6,247	7,625	(1,378)	0
1/29/2009	4	6,846	71	0	0	0	9,732	3,329	6,403	7,625	(1,222)	0
1/30/2009	5	5,126	51	0	0	0	9,626	3,329	6,297	7,625	(1,328)	0
1/31/2009	6	3,892	40	1	0	0	8,958	3,329	5,629	7,625	(1,996)	0
2/1/2009	7	5,189	65	0	1	0	8,325	3,329	4,996	7,625	(2,629)	0
2/2/2009	1	7,467	82	0	0	0	9,550	3,329	6,221	7,625	(1,404)	0
2/3/2009	2	7,215	77	0	0	0	9,670	3,329	6,341	7,625	(1,284)	0
2/4/2009	3	6,347	69	0	0	0	9,417	3,329	6,088	7,625	(1,537)	0
2/5/2009	4	4,473	50	0	0	0	9,044	3,329	5,715	7,625	(1,910)	0
2/6/2009	5	3,771	43	0	0	0	8,894	3,329	5,565	7,625	(2,060)	0
2/7/2009	6	4,652	54	1	0	0	8,626	3,329	5,297	7,625	(2,328)	0
2/8/2009	7	3,735	44	0	1	0	8,461	3,329	5,132	7,625	(2,493)	0
2/9/2009	1	3,647	32	0	0	0	9,574	3,329	6,245	7,625	(1,380)	0
2/10/2009	2	3,727	35	0	0	0	9,411	3,329	6,082	7,625	(1,543)	0
2/11/2009	3	4,164	45	0	0	0	9,080	3,329	5,751	7,625	(1,874)	0
2/12/2009	4	4,917	57	0	0	0	8,911	3,329	5,582	7,625	(2,043)	0
2/13/2009	5	5,097	60	0	0	0	8,830	3,329	5,501	7,625	(2,124)	0
2/14/2009	6	5,659	62	1	0	0	8,962	3,329	5,633	7,625	(1,992)	0
2/15/2009	7	4,655	56	0	1	0	8,518	3,329	5,189	7,625	(2,436)	0
2/16/2009	1	4,537	54	0	0	0	8,812	3,329	5,483	7,625	(2,142)	0
2/17/2009	2	4,663	59	0	0	0	8,538	3,329	5,209	7,625	(2,416)	0
2/18/2009	3	6,415	71	0	0	0	9,329	3,329	6,000	7,625	(1,625)	0
2/19/2009	4	5,873	64	0	0	0	9,364	3,329	6,035	7,625	(1,590)	0
2/20/2009	5	5,399	64	0	0	0	8,872	3,329	5,543	7,625	(2,082)	0
2/21/2009	6	5,554	66	1	0	0	8,587	3,329	5,258	7,625	(2,367)	0
2/22/2009	7	5,750	63	0	1	0	9,038	3,329	5,709	7,625	(1,916)	0
2/23/2009	1	5,299	61	0	0	0	8,964	3,329	5,635	7,625	(1,990)	0
2/24/2009	2	3,992	49	0	0	0	8,612	3,329	5,283	7,625	(2,342)	0
2/25/2009	3	5,605	69	0	0	0	8,677	3,329	5,348	7,625	(2,277)	0
2/26/2009	4	6,422	86	0	0	0	8,200	3,329	4,871	7,625	(2,754)	0
2/27/2009	5	6,397	79	0	0	0	8,706	3,329	5,377	7,625	(2,248)	0
2/28/2009	6	6,167	73	1	0	0	8,614	3,329	5,285	7,625	(2,340)	0

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
Response Comments

Docket No. G007/M-09-1282; G011/M-09-1283; G011/M-09-1284; and G011/M-09-1285

Dated this **7th of June, 2010**

/s/Sharon Ferguson

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