division of energy resources
Minnesota Department of Commerce

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July 1, 2013

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

RE: **Comments of the Minnesota Department of Commerce, Division of Energy Resources**
Docket Nos. E002/CI-13-315 and E002/GR-10-971

Dear Dr. Haar:

Attached are comments of the Minnesota Department of Commerce, Division of Energy Resources (Department) concerning Northern States Power Company d/b/a Xcel Energy's (Xcel or Company) progress on the Large Customer Photovoltaic Rate proposal including concerns regarding the Effective Load Carrying Capacity (ELCC) study work to date, agreement on next steps, and remaining issues.

As discussed further herein, based on our review of the May 1st draft ELCC report, our participation in the June 11th stakeholder meeting, and subsequent analysis and discussions, the Department recommends that Xcel take the following steps, which the Department has discussed with Xcel:

- Use time-synchronized PV and load data: The Department recommends that Xcel rerun the full ELCC analysis with specific year, specific site, time-stamped hourly electrical output for photovoltaic (PV) plants (using the National Renewable Energy Laboratory's System Advisor Model and the National Solar Radiation Database) with time-synchronized load data from the same year from Xcel or the Midcontinent Independent System Operator (MISO). The analysis should be run for multiple full years.

  Acceptable alternatives to rerunning the full ELCC could be to:
  - Approximate the ELCC using the approximation methodology specified in MISO's Business Practices Manual for non-wind variable generation and the available historical Minnesota large PV plant data sets (St. Johns and the Minneapolis Convention Center), or
  - Leave the interim solar capacity credit in place until after the Value of Solar methodology (including the capacity value component) is developed by the Department and approved by the Commission (scheduled for April 1, 2014).

- Study multiple PV plant orientations: The Department recommends that Xcel use the following PV array orientations to cover a representative range of installations:
  - 10 degree tilt @ 180 degree azimuth,
  - 30 degree tilt @180 degree azimuth,
  - 45 degree tilt @180 degree azimuth,
  - 30 degree tilt @200 degree azimuth,
  - 30 degree tilt @ 220 degree azimuth, and
  - a tracker with single axis 45 degree east & 45 degree west of 180 degree azimuth.

- Study multiple smaller plants over numerous, geographically diverse locations: The Department recommends that Xcel disaggregate the PV study into at least a half dozen geographically dispersed sites.

- Calculate the value of avoided capacity: Using the method outlined on pages 6-8 of the Department's December 3, 2012 comments in Docket Nos. E002/GR-10-971 and E002/M-10-1278, the Department recommends that Xcel apply the percent of PV nameplate rating from the corrected ELCC assessment to the avoided capacity value of a gas peaking plant and the associated updated transmission and distribution losses to calculate the solar capacity credit ($/kW-month).

In addition, the Department recommends, as will be developed further in subsequent comments, that the capacity credit of $5.15 per kW-month be applied to all hours in all months. The Department discusses this issue further below.

Finally, the Department notes that the work on capacity value of large PV in this docket should inform but not limit or predetermine the outcome of the upcoming work on the development of the methodology Value of Solar Tariff stemming from the alternative tariff; Article 9, Subdivision 10 of new energy legislation. While the Department expects the basic principles in the two proceedings to be similar, there are differences in the approaches; further, discovery of relevant facts as the work progresses may lead to revisions over time.

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

Sincerely,

/s/ CHRISTOPHER T. DAVIS
Rates Analyst

CTD/ja
Attachment

division of energy resources
Minnesota Department of Commerce

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

COMMENTS OF THE MINNESOTA DEPARTMENT OF COMMERCE DIVISION OF ENERGY RESOURCES

CAPACITY RATE FOR LARGE SOLAR PHOTOVOLTAIC RESOURCES

DOCKET NOS. E002/CI-13-315 and E002/GR-10-971

I. BACKGROUND

Overview of Department's Initial Comments (E002/GR-10-971)

On December 3, 2012 the Minnesota Department of Commerce, Division of Energy Resources (Department) filed initial comments concerning Northern States Power Company d/b/a Xcel Energy's (Xcel or the Company) Compliance Filing in regards to the Company's agreement to study the load profile of solar generation facilities. The Department noted the following in those comments:

- The Department agreed with Xcel that PV systems contribute to meeting power system capacity requirements during peak periods and that Xcel's current Standby Tariff does not yet incorporate this contribution.
- Xcel's initial analysis used an approximation method for estimating the value of capacity of generation resources. Effective Load Carrying Capability (ELCC), the best practice in the industry for determining the capacity value of variable generation resources, is a more rigorous analytical approach but requires more sophisticated modeling and more robust PV and load data.
- The Department recommended improvements to Xcel's initial analysis. These improvements indicated that that the PV capacity credit could range as high as approximately $7.44 to $9.57 per kW per month. The upper end of this range resulted from application of MISO rules to accredit non-wind variable generation

resources (these rules are based on the hours ending 2pm, 3pm, and 4pm Central in the months June, July, and August).

- The Department recommended that the Commission require Xcel to file a petition to establish a solar capacity credit that appropriately reflects the value of solar resources on the Xcel system. The Department recommended that the solar capacity credit be implemented by modifying the Standby Service Rider.
- The Department recommended that the Commission require Xcel to conduct an ELCC study for photovoltaic resources in its territory by the end of 2013. In addition, the Department recommended that Xcel work with MISO to conduct a more rigorous ELCC study.
- Assessment of the value provided by PV connected to the grid is occurring in many regions around the country. These assessments have identified a number of valuation categories including energy savings, loss savings, generation capacity savings, fuel price hedge value, transmission and distribution capacity savings, and environmental benefits. The Xcel Solar Load Profile Study is an initial, partial assessment of one of the values (capacity) provided by grid connected PV. The Department will work with stakeholders in the coming year to refine estimated values and costs of distributed generation in Minnesota.

Department's Reply Comments (E002/GR-10-971)

On January 18, 2013 the Department filed reply comments recommending that the Commission set the capacity value at $5.15 per kW-month for every month.

Order Setting Interim Rate and Establishing New Solar Rate Docket

On April 13, 2013 the Commission ordered the following:

1. Xcel shall immediately modify its Standby Service tariff to provide an interim photovoltaic capacity credit of $5.15 per kW per month. Large photovoltaic customers on the Standby Service tariff should receive this credit beginning with bills issued on or after June 1, 2013.
2. Xcel's study filed on September 14, 2012 meets the requirements of paragraph 16 in the Commission's May 14, 2012, Findings of Fact, Conclusions, and Order in Docket No. 10-971.
3. Docket No. E002/CI-13-315, *In the Matter of a Rate for Large Solar Photovoltaic Installations*, is established for future submissions in this matter. Xcel's solar load profile data study, and all filings related to the study in Dockets No. 10-971 and 10-1278 filed on or after August 24, 2012 are hereby incorporated into Docket 13-315 by reference. Filings described in the paragraphs below shall be filed in Docket No. 13-315.

4. On or before May 1, 2013, Xcel shall file preliminary results of its Effective Load Carrying Capacity study, including as much supporting data as possible.
5. Xcel shall hold a meeting with stakeholders to explain and discuss the preliminary inputs, assumptions, and results of the study, and shall encourage stakeholders to file information requests, to which Xcel shall respond.
6. Xcel shall re-run the ProSym analysis used in the Effective Load Carrying Capacity study in response to stakeholder requests and file the revised results.
7. On or before July 1, 2013, Xcel shall (and stakeholders may) file with the Commission a report on progress on the Large Customer Photovoltaic Rate proposal, and agreement or disagreement over results of the Effective Load Carrying Capacity Study.
8. On or before October 1, 2013, Xcel shall file a large customer photovoltaic rate proposal that appropriately reflects the value of solar resources on Xcel's system. As part of the Company's proposal, Xcel shall also re-evaluate the interim Standby Service tariff capacity credit established in paragraph 1, above.
9. Xcel shall work with stakeholders to explore and develop the solar rate proposal. The proposal should address concerns raised by interested parties and stakeholders, including responses to the Company's Solar Load Profile Study (filed September 14, 2012 in Docket No. 10-917) and the ELCC study, as well as any legislation enacted by the Legislature.

Draft ELCC Study

On May 1st Xcel filed a draft Solar Effective Load Carrying Capability Study (E002/CI-13-315). Xcel held a stakeholder meeting on June 11, 2013 to review and discuss the draft report.

Related New Energy Legislation (Article 9, Subdivision 10 – Alternative Tariff)

The 2013 Minnesota Legislature concluded in May 2013 with multiple new policies affecting future solar development in the state. One of these new policies is a Value of Solar Tariff. As an alternative to net metering, investor-owned utilities may apply to the Commission for a value of solar tariff that compensates customers through a credit for the value to the utility, its customers, and society for operating distributed PV systems interconnected to the utility and operated by the customer primarily for meeting their own energy needs. In other words, this approach moves the netting of energy sold to and bought from the customer from the meter to the bill. The Department must establish the methodology no later than January 31, 2014. The methodology must include the value of energy and its delivery, generation capacity, transmission capacity, transmission and distribution line losses, and environmental values.

The Department is currently putting together implementation plans, including a stakeholder process, for development of the Value of Solar methodology.

Although one component of the alternative tariff, generation capacity, is similar to the PV capacity credit, which is the focus of this docket, the alternative tariff will only be available after a) the Department develops the methodology (by January 31, 2014), b) the Commission approves the methodology, c) the utility chooses to develop an alternative tariff (using the approved methodology) and submits it to the Commission for approval and d) the Commission approves the tariff. Even then, this alternative tariff would only apply to customers that qualify for net metering and thus would be inaccessible to some large photovoltaic customers.

II. DEPARTMENT'S ANALYSIS

A. XCEL COMPLIANCE FILING (E002/CI-13-315)

On May 30, 2013 Xcel filed an Interim Rate of $5.15 per kW per month as a modification to the Standby Service Rider. In response to an Information Request from the Solar Rate Reform Group (SRRG IR 1), Xcel stated that the interim solar capacity credit "occurs in billing months after grace period hours are exhausted." From the Department' review of Xcel's May 30, 2013 compliance tariff filing (see Attachment) it appears that Xcel is interpreting the tariff language to delay application of the credit for several months each year (the standby grace period is 964 hours per year).

However, the Department's recommendation was that "the capacity credit be set at $5.15 per kW-month for every month." It appears that the Commission's Order adopted that approach by stating that "large photovoltaic on the Standby Service tariff should receive this credit beginning with bills issued on or after June 1, 2013."

The Department was unaware of Xcel's interpretation until reviewing Xcel's response to SRRG's information request noted above, subsequent to Xcel's May 30, 2013 compliance filing. Because the solar rate is interim and will be revised in the near future, and because a significant amount of resources will be required by numerous parties in developing the final solar rates, the Department reserves this issue now, to be addressed in final solar rates, based on further development of this issue. Thus, to help develop this issue, the Department recommends that Xcel address in reply comments the basis for the Company's interpretation and approach.

B. BASIS FOR USING ELCC

ELCC is a rigorous analytical approach but it requires sophisticated modeling tools and robust PV and load data. As with all modeling work, the specific assumptions and methodologies can have a significant impact on the study findings. Particularly important is starting with a robust PV data set that is time synchronized with the appropriate corresponding load data set.

Power System reliability requires that there be sufficient installed capacity to meet electric load at a prescribed level of risk (resource adequacy). Capacity value is the amount of additional load that can be served due to the addition of a generator while maintaining the prescribed levels of reliability. Effective Load Carrying Capability (ELCC), a Loss of Load Probability (LOLP) / Loss of Load Expectation (LOLE) based reliability analysis, is the preferred methodology for assessing capacity value of solar generation.

MISO sets a Planning Reserve Margin annually for Xcel, based on MISO LOLE study. The capacity value for wind generation on the Xcel system has for a number of years been set using an ELCC methodology through MISO's annual full LOLE study. It is expected that, as solar resources grow in the Midwest and more high quality PV data sets become available, MISO will in future years also calculate the capacity value of PV in the same rigorous LOLE study process.

As noted above, the Department and Xcel have been discussing refinements to Xcel's ELCC method. The Department appreciates Xcel's cooperation to date and expects that the solar rates developed in this proceeding will be based on appropriate data. The following are some of the issues that have been discussed to date.

1. *Time-synchronized PV and load data*

PV and load data sets that are high quality and time-synchronized are critically important to producing a meaningful ELCC answer. Xcel's use of Typical Meteorological Year data does not meet this threshold. This important requirement can be met by using time-stamped, time synchronized PV and load data sets in a full ELCC analysis or by using an ELCC approximation such as the MISO Business Practices Manual methodology for accrediting capacity of non-wind variable generation (as outlined in the Departments initial 12/3/12 comments to the Commission).

2. *Multiple PV plant orientations:*

Xcel studies a single PV plant orientation (array tilt & azimuth). The orientation of PV facilities (e.g. whether the facilities are installed in an orientation that maximizes annual energy production, or in one that maximizes power production in the peak hour, or track to face the sun as the sun moves throughout the day) affects the amount of power a PV unit produces and thus raises the question about whether it is necessary to have different rates for solar units that follow the sun (maximizing annual energy) or are set to optimize the alignment of PV output with peak load hour (maximize peak production).

3. Multiple smaller plants over numerous, geographically diverse locations

An important characteristic of solar resources is spatial diversity – total variability decreases and capacity value increases relative to larger region sizes. Because the 100 MW increment of solar studied in the draft analysis was modeled as a single plant in a single location, the study needs to be expanded to reflect the diverse configuration.

4. Calculating the value of avoided capacity

The items listed above pertain to calculating the amount of solar capacity to which a value of solar should be applied. In the draft ELCC report, Xcel discussed the second key component of the solar capacity credit: the value of the avoided capacity. Xcel used the monthly demand charge for this component. However, this rate is significantly less than the avoided capacity value of a gas peaking plant and the associated transmission and distribution losses, as discussed in the Department's initial comments. For the reasons identified in those December 3, 2012 comments, which were part of the basis for the approved interim rate, the Department recommends that Xcel apply the percent of PV nameplate rating from the corrected ELCC assessment to the avoided capacity value of a gas peaking plant and the associated updated transmission and distribution losses to calculate the solar capacity credit ($/kW-month).

III. RECOMMENDATIONS

The Department recommends that Xcel do the following in calculating the value of solar in this proceeding:

- Use time-synchronized PV and load data: The Department recommends that Xcel rerun the full ELCC analysis with specific year, specific site, time-stamped hourly electrical output for photovoltaic (PV) plants (using the National Renewable Energy Laboratory's System Advisor Model and the National Solar Radiation Database) with time-synchronized load data from the same year from Xcel or the Midcontinent Independent System Operator (MISO). The analysis should be run for multiple full years.

  Acceptable alternatives to rerunning the full ELCC could be to:
  - Approximate the ELCC using the approximation methodology specified in MISO's Business Practices Manual for non-wind variable generation and the available historical Minnesota large PV plant data sets (St. Johns and the Minneapolis Convention Center), or
  - Leave the interim solar capacity credit in place until after the Value of Solar methodology (including the capacity value component) is developed by the Department and approved by the Commission (scheduled for April 1, 2014).

- Study multiple PV plant orientations: The Department recommends that Xcel use the following PV array orientations to cover a representative range of installations:
  - 10 degree tilt @ 180 degree azimuth,
  - 30 degree tilt @180 degree azimuth,
  - 45 degree tilt @180 degree azimuth,
  - 30 degree tilt @200 degree azimuth,
  - 30 degree tilt @ 220 degree azimuth, and
  - a tracker with single axis 45 degree east & 45 degree west of 180 degree azimuth.

- Study multiple smaller plants over numerous, geographically diverse locations: The Department recommends that Xcel disaggregate the PV study into at least a half dozen geographically dispersed sites.

- Calculate the value of avoided capacity: Using the method outlined on pages 6-8 of the Department's December 3, 2012 comments in Docket Nos. E002/GR-10-971 and E002/M-10-1278, the Department recommends that Xcel apply the percent of PV nameplate rating from the corrected ELCC assessment to the avoided capacity value of a gas peaking plant and the associated updated transmission and distribution losses to calculate the solar capacity credit ($/kW-month).

In addition, the Department recommends that Xcel address in reply comments the basis for the Company's interpretation that they would apply the interim solar capacity credit ($5.15/kW-month) until after the 964 hours of standby grace period is exhausted each year (results in a delay of about 2 months each year)

/ja

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MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2

STANDBY SERVICE RIDER

Section No. 5
~~9th~~10th Revised Sheet No. 101

AVAILABILITY

~~Available~~Applicable to ~~any non-residential~~ customers ~~who has~~ that use an alternative generation source ~~of electric energy supply~~ with a capacity greater than 60 kW, ~~which~~ where the alternative generation~~normally~~ serves all or a portion of ~~the~~ customer's electrical ~~load~~ energy requirements and ~~who~~where customer ~~desires~~chooses to use ~~of~~ the Company's electric service ~~for temporary backup or maintenance power~~ to serve that load when the alternative generation is either partly or wholly unavailable.

Under this ~~service~~tariff the Company will provide ~~a permanent service connection to supply the customer's contracted load~~ Standby Service in accordance with the provisions of this tariff as well as those of Section 2.4 of ~~in~~ the General Rules and Regulations~~, Section 2.4~~.

RESERVATION ~~FEES~~RATE

	Firm Standby		Non-Firm Standby
	Unscheduled Maintenance	Scheduled Maintenance	~~Non-Firm Standby~~
Customer Charge per Month	$25.15	$25.15	$25.15
Demand Charge per Month per kW of Contracted Standby Capacity			
~~Distribution Standby Capacity Fee~~			
Secondary Voltage Service	~~$2.20~~$3.00	~~$2.20~~$2.90	~~$2.20~~$2.10
Primary Voltage Service	~~$1.65~~$2.15	~~$1.65~~$2.05	~~$1.65~~$1.25
Transmission Transformed Voltage Service	~~$0.90~~$1.50	~~$0.90~~$1.40	~~$0.90~~$0.60
Transmission Voltage Service	~~$0.00~~$0.90	~~$0.00~~$0.80	~~$0.00~~$0.00
~~Transmission Standby Capacity Fee~~	~~$2.35~~	~~$2.35~~	~~$2.35~~
~~Generation Standby Capacity Reservation Fee~~	~~$0.62~~	~~$0.52~~	~~$0.00~~
Hours per kW of Contracted Standby Capacity	964	964	0

Annual ~~Allowed~~ Grace Period ~~of Unscheduled~~ Use of Unscheduled Standby, ~~Service for~~ Exemption from the Demand Charge Component of the "Usage Rates" below.~~Usage Rates (Hours per kW of Contracted Standby Capacity)~~

USAGE RATES

Demand Charge ~~per Month~~ per kW of Standby Capacity Used. After the Annual Grace Period hours provided for Unscheduled and Scheduled Service are used up, the Demand Charge of the base tariff, to which this Rider

(Continued on Sheet No. 5-102)

Date Filed: ~~07-30-10~~11-03-10 By: Judy M. Poferl Effective Date: ~~02-01-11~~ 09-01-12

President and CEO of Northern States Power Company, a Minnesota corporation

Docket No. E002/~~M-10-854~~GR-10-971 Order Date: ~~01-28-11~~ 05-14-12

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MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2

STANDBY SERVICE RIDER

Section No. 5
~~9th~~10th Revised Sheet No. 101

is attached, replaces the above Reservation Rate. ~~Capacity actually used under this Rider will be charged at the same demand rate as contained in the base tariff to which this Rider is attached.~~

Energy Charge per kWh of Standby Energy Used. All ~~E~~energy ~~actually~~ used under this Rider will be charged at the ~~same~~ applicable energy rate ~~as contained in~~of the base tariff to which this Rider is attached. T T

In addition, customer bills under this rate are subject to the following adjustments and/or charges.

FUEL CLAUSE
Bills are subject to the adjustments provided for in the Fuel Clause Rider.

(Continued on Sheet No. 5-102)

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401
MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2

STANDBY SERVICE RIDER (Continued)

Section No. 5
~~7th~~8th Revised Sheet No. 102

RESOURCE ADJUSTMENT
Bills are subject to the adjustments provided for in the Conservation Improvement Program Adjustment Rider, the State Energy Policy Rate Rider, the Renewable Development Fund Rider, the Transmission Cost Recovery Rider, the Renewable Energy Standard Rider and the Mercury Cost Recovery Rider. T

ENVIRONMENTAL IMPROVEMENT RIDER
Bills are subject to the adjustments provided for in the Environmental Improvement Rider.

SURCHARGE
In certain communities, bills are subject to surcharges provided for in a Surcharge Rider.

In addition, customer bills under this rate are subject to the following adjustments and/or charges.

LATE PAYMENT CHARGE
Any unpaid balance over $10.00 is subject to a 1.5% late payment charge or $1.00, whichever is greater, after the date due. The charge may be assessed as provided for in the General Rules and Regulations, Section 3.5.

DETERMINATION OF DEMAND
~~For billing purposes, the customer~~The billing demand ~~for~~applicable to this Standby Service Rider ~~will be~~is determined separately from the billing demand ~~determined under~~applicable to the base tariff to which this Rider ~~applies~~attaches. ~~For purposes of applying the Reservation Fee,~~The demand associated with actual use of Standby Service will be subtracted from the total metered demand, to determine the demand for standard service, to which the base tariff demand charge applies. T

For applying the Standby Service Reservation Rate, the billing demand will be the ~~quantity~~contracted Standby capacity specified in the customer's Electric Service Agreement, which is ~~as~~ the maximum ~~amount~~capacity of Standby Service the Company is obligated to supply, ~~with~~ and is the ~~maximum value for a customer's Contracted Standby Capacity being the~~ amount of load served ~~on-site~~ by the customer's alternative generation, ~~but it~~In no case shall the contracted Standby capacity be established at more than the capacity of the customer's generation facility. This ~~quantity~~contracted Standby capacity may be different ~~between~~for the summer and winter seasons. ~~For applying the Usage Rate, the demand will be the smaller of the following two amounts: (1) the amount of the Standby capacity contracted for by the customer minus the actual demand supplied by the customer's own generating facilities, but not less than zero, or (2) the amount of actual capacity supplied by the Company.~~

~~This amount of used Standby service~~ For applying the demand component of the Usage Rates, the billing demand shall be the capacity actually used by the customer, when customer's generator is wholly or partly out of service ~~will be determined independent of and will have no effect on the billing demand of the customer under their base tariff including any demand ratchet provisions of that base tariff.~~ This amount of Standby capacity T

(Continued on Sheet No. 5-103)

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401
MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2

STANDBY SERVICE RIDER (Continued)

Section No. 5
~~7th~~8th Revised Sheet No. 102

contracted for, less the actual capacity supplied by the customer's generating facilities (assuming it is operating, but not at full capacity) but not less than zero.

TERMS AND CONDITIONS OF SERVICE

1. Standby Service Rider is applicable to any ~~non-residential~~ customer who requires ~~40~~ greater than 60 kW ~~or more~~ of Standby capacity ~~from the Company~~. Standby Service may not be used by a customer to serve controllable demand that is subject to interruption as determined by the Company under the Company's controllable service schedules~~, however, customer will always be permitted to implement demand side load reductions or use alternative generation capacity when necessary, due to full or partial outage of the customer's generator, instead of using Standby Service from the Company.~~ TC T

(Continued on Sheet No. 5-103)

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401
MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2

STANDBY SERVICE RIDER (Continued)

Section No. 5
~~2nd~~3rd Revised Sheet No. 103

TERMS AND CONDITIONS OF SERVICE (Continued)

2. Customer will execute an Electric Service Agreement with the Company which will specify:
   a. Type of Standby Service elected by the customer and the base tariff ~~that~~to which this Rider is attached ~~to and under which demand and energy rates will be selected during months Standby power is used~~. I I I
   b. The total Standby capacity requirements for which Company will be providing Standby power and to which the Standby Service reservation ~~fee~~rate applies as well as the expected level of ~~firm~~ standard service the customer will take, even if ~~that~~the standard service level is expected to be zero. I I

3. The Company's standard service meter will be ~~ratcheted~~detented to measure only the ~~flow~~amount of ~~power~~capacity and energy ~~from~~ provided by the Company to the customer ~~only~~. I I

4. Company will not be obligated to supply Standby Service to back-up a customer's generator at a level in excess of the Standby capacity for which customer has contracted. This restriction in no way limits the amount of ~~load~~standard service ~~for which a~~the customer ~~may~~ requires ~~service~~ from the Company under the ~~base~~standard service tariff to which this Rider is attached. Any limits on standard service are governed by the provisions contained in the standard service tariffs. I I I

5. Customer will be liable for all damages allowed by law to the extent caused by customer's use of Standby power in excess of contracted Standby capacity.

6. Company will require customer to revise the Electric Service Agreement to contract for additional Standby ~~and Supplemental~~ capacity if the customer exceeds the contract amount in any three of the preceding 12 months. I I

7. Customer will annually furnish documentation to Company confirming the maximum capacity and reliability of the power source for which customer requires Standby Service. The Company and the customer will review the actual output and performance of the power source relative to the capacity nominated for Standby Service in the Electric Service Agreement. If this review shows a significant and consistent shortfall between the power source's actual performance and the nominated capacity due to factors reasonably within the customer's control, the Company will notify the customer of its intent to refuse to provide Standby Service. Upon receipt of such notice, the customer may agree to reduce the Standby Service nomination in its Electric Service Agreement or to take such action as necessary to operate the power source at or reasonably near the nominated Standby Service capacity. If the customer's power source does not operate at or reasonably near that level during the 12 months immediately following the Company's notice, the Company may refuse to provide Standby Service until such time as the customer agrees to reduce its Standby Service nomination or provide the Company with documentation demonstrating the power source's actual performance at or reasonably near the nominated Standby Service capacity for a trial period of three consecutive months.

(Continued on Sheet No. 5-104)

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401
MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2

STANDBY SERVICE RIDER (Continued)

Section No. 5
~~2nd~~3rd Revised Sheet No. 103

8. Customer will remain on Standby Service for a period of not less than 12 months.

(Continued on Sheet No. 5-104)

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401
MINNESOTA ELECTRIC RATE BOOK – MPUC NO. 2

STANDBY SERVICE RIDER (Continued)

Section No. 5
~~2nd~~3rd Revised Sheet No. 104

TERMS AND CONDITIONS OF SERVICE (Continued)

9. Customer will be allowed annually a ~~grace~~ Grace ~~period~~Period as specified above for use of unscheduled Standby Service without incurring additional demand charges for use of Standby Service. Use of this ~~grace~~Grace ~~period~~Period will be measured in terms of Standby energy used by customer with the maximum amount of grace energy being the hours specified above times the contracted Standby capacity. After the ~~grace~~Grace ~~period~~Period has been exhausted and customer uses unscheduled Standby Service, the customer shall pay the Demand Charge specified in the Usage Rates instead of the Reservation Fees as listed above. In a billing month, when customer uses Standby Service, the base tariff billing demand and the Standby Service billing demand will be determined individually. The base tariff billing demand will be the greatest 15 minute load determined after separating Standby Service usage from the total metered demands. The time of this determined greatest 15 minute demand for application to the base tariff may or may not ~~be~~occur at the same time when Standby Service is used. Billed demand charges for usage of Standby Service will be in addition to the billed demand charges for the base tariff as just described.

10. Notwithstanding the ~~grace~~ Grace ~~period~~Period noted in ~~Section~~provision 9 above, in the event customer requires unscheduled Standby Service at the times of Company's system peak hours in which the Company would have insufficient accredited capacity under the Midwest Reliability Organization (MRO) ~~and MAPP~~ or any successor organization, ~~if not for additional capacity purchases,~~ and the Company incurs additional capacity costs as a result of such unscheduled Standby Service, customer shall pay ~~peak~~Peak ~~demand~~Demand ~~charges~~Charges described below for the month in which such unscheduled Standby Service occurs and for each of the five succeeding months, instead of the above listed demand charges, or the demand charges under Section 9 above. Such ~~peak~~Peak ~~demand~~Demand ~~charges~~Charges shall be based upon the following:

    a. If customer has notified Company of an unscheduled outage at least three hours prior to Company's system peak hour, such ~~peak~~ Peak ~~demand~~Demand ~~charges~~Charges shall be based on one-sixth of any additional capacity costs incurred by the Company as a result of the unscheduled outage. Such additional capacity costs shall not include any after-the-fact capacity purchase costs incurred by the Company.

    b. If customer has not notified the Company of any unscheduled outage at least three hours prior to the Company's system peak hour, such peak demand charges shall be based on one-sixth of any additional capacity costs or after-the-fact purchase costs incurred by the Company as a result of the unscheduled outage. The demand for billing purposes for the succeeding five months shall be equal to the demand placed on the system during the time of the Company's system peak hour in which the said additional capacity costs were incurred.

(Continued on Sheet No. 5-105)

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401
MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2

STANDBY SERVICE RIDER (Continued)

Section No. 5
~~3rd~~4th Revised Sheet No. 105

TERMS AND CONDITIONS OF SERVICE (Continued)

The provisions of this Section 10 shall not apply if ~~the Company has obtained~~ appropriate ~~generation~~capacity accreditation has been obtained for the customer's generation from the Midwest Reliability Organization (MRO) ~~and MAPP~~, or any successor organization. Customer must take responsibility for ~~will cooperate fully and assist in~~ the preparation of the information necessary for the accreditation filing. The Company will advise and assist the Customer in this process but ~~F~~failure of customer ~~to assist~~ in the preparation of the information and/or failure to obtain accreditation of the customer's generation will result in the customer being ineligible for the exemption from the provisions of this Section 10.

11. In the event any portion of the capacity ~~associated with the~~obtained by the Company, at additional ~~capacity~~ costs, ~~or after the fact purchase costs incurred by the Company~~ and which is attributable to the customer's use of Standby Service under Section 10 above, ~~are~~is subsequently also used to satisfy the ~~Company's capacity~~ requirements ~~for~~ of the Company's other customers, the ~~peak~~Peak ~~demand~~Demand ~~charges~~Charges under Section 10 above shall be ~~discounted~~reduced ~~with respect~~ relative to ~~that~~the portion ~~subsequently~~of said capacity used ~~by~~ to serve ~~the Company's~~ other customers.

12. The Company shall provide notice to the Standby customers when peak load conditions are expected to occur through the same means that the Company notifies interruptible customers of the potential interruption.

13. Company will install and charge customer for the additional metering necessary, ~~as determined by the Company,~~ to allow for ~~proper billing~~determination of the separate billing demand applicable to the base tariff and Standby Rider ~~demands~~ and for determining energy use under the ~~grace~~Grace ~~period~~Period identified above. In particular, the Company will install a separate meter that measures the flow of power and energy from the customer's own generating facility. Customer shall reimburse the Company for the costs of installing, operating, and maintaining ~~these meters~~ the required additional metering and for any other facilities required to serve the customer's Standby load. ~~Such required additional equipment shall include the metering equipment used to measure the electrical output of the customers' alternative source of electric energy supply. In particular, the Company will install a meter that measures the flow of power and energy from the customer's own generating facility.~~ If, as a result of the customer's construction and installation of their generating facility, it is more practical ~~or economical~~ for the customer to install some or all of the metering equipment required, the customer may be permitted to do so, subject to Company's approval of ~~an installation plan for~~ such equipment.

(Continued on Sheet No. 5-106)

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401
MINNESOTA ELECTRIC RATE BOOK – MPUC NO. 2

STANDBY SERVICE RIDER (Continued)

Section No. 5
~~2nd~~3rd Revised Sheet No. 106

ADDITIONAL TERMS AND CONDITIONS OF SERVICE ASSOCIATED WITH ~~FIRM STANDBY~~THE SCHEDULED MAINTENANCE OPTION T T T

1. The optional Scheduled ~~maintenance~~Maintenance rates are available to Standby Service customers who agree to schedule maintenance of their power source during qualifying scheduled maintenance periods.

2. Qualifying Scheduled Maintenance Periods

   Customers With Greater Than 6040 kW to 10,000 kW of Contracted Standby Capacity. Maintenance must occur within the calendar months of April, May, October, and November. Customer must provide Company with written notice of scheduled maintenance prior to the beginning of the maintenance period. C

   Customers With Greater Than 10,000 kW of Contracted Standby Capacity. Maintenance must occur at a time period mutually agreed to by Company and customer. These time periods will normally not include those times when Company expects system seasonal peak load conditions to occur, ~~and~~ nor at those times when Company is required to use ~~oil-fired generation equipment or to purchase power that results in equivalent production costs~~generation or to purchase power, with production costs of $70 or more per MWh. Customer shall provide an annual projection of scheduled maintenance to the Company. Customer shall be allowed changes or additions to this projection upon notice to the Company based on the following schedule: T T TR T

Outage Length	Required Notice
Less than 48 hours	24 hours
2 days to 30 days	7 days
Over 30 days	90 days

3. The duration of qualifying scheduled maintenance periods may not exceed a total of six weeks in any 12 month period.

4. An additional charge shall apply if customer does not comply with all terms and conditions for qualifying scheduled maintenance periods. The additional charge shall be determined by calculating the additional charges which would have applied if customer were billed on the Unscheduled Maintenance Option for the period extending back to the customer's last scheduled maintenance period.

5. The demand charges of the base tariffs~~General Service or General Time of Day Service demand charges~~ shall not apply to use of Standby Service during qualifying scheduled maintenance periods. ~~Further~~Also, use of Standby Service during qualifying scheduled maintenance periods, ~~time and energy~~ will not count against the grace period. T T T

(Continued on Sheet No. 5-107)

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401
MINNESOTA ELECTRIC RATE BOOK – MPUC NO. 2

STANDBY SERVICE RIDER (Continued)

Section No. 5
~~1st~~2nd Revised Sheet No. 107

ADDITIONAL TERMS AND CONDITIONS OF SERVICE FOR NON-FIRM STANDBY OPTION

1. Non-firm standby rates are available to customers who agree to use Standby Service only by prearrangement with the Company.

2. Company makes no guarantee that Standby Service will be available to Non-Firm Standby Service customers; however, the Company will make reasonable efforts to provide Standby Service whenever possible.

3. Customer must request use of Standby Service and receive approval from the Company prior to actually using Standby Service.

4. Use of Standby Service without prior approval by the Company shall subject the Non-Firm Standby Service customer to the following:
   a. ~~General Service or General Time of Day Service~~The monthly demand charges ~~for~~from the base tariff applied to the unapproved Standby Service used in the month in which unapproved use of Standby Service occurred~~a given month~~, plus
   b. Firm Standby Service unscheduled maintenance option reservation fees retroactively applied to the ~~for~~ six months prior to the month in which unapproved use of Standby Service occurred.

5. If unapproved use of Standby Service occurs twice in any 12 month period, the Company reserves the right to convert the Non-Firm Standby Service customer to Firm Standby Service.

6. Non-Firm Standby Service customers will remain on Non-Firm Standby Service for a period of not less than five years which includes a one year trial period.

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, certified mail, 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 Department of Commerce
Comments

Docket No. E002/CI-13-315 and E002/GR-10-971

Dated this **1st** day of **July, 2013**

/s/Sharon Ferguson

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