

June 22, 2015

Daniel P. Wolf
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 No. E015/PA-15-375

Dear Mr. Wolf:

Attached are the Comments of the Minnesota Department of Commerce, Division of Energy Resources (Department), in the following matter:

Minnesota Power's Petition for Approval of Transfers Pursuant to the Edison Electric Institute Spare Transformer Sharing Agreement.

The petition was filed on April 22, 2015 by:

Christopher D. Anderson
Associate General Counsel
Minnesota Power
30 West Superior Street
Duluth, MN 55802

The Department recommends **approval, with modifications**, and is available to answer any questions the Minnesota Public Utilities Commission may have.

Sincerely,

/s/ Craig Addonizio
Financial Analyst

CA/lt
Attachment

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

COMMENTS OF THE
MINNESOTA DEPARTMENT OF COMMERCE
DIVISION OF ENERGY RESOURCES

DOCKET No. E015/PA-15-375

I. INTRODUCTION

On April 22, 2015, Minnesota Power (MP or the Company), filed a Petition with the Minnesota Public Utilities Commission (Commission) for an Order approving asset transfers pursuant to the Edison Electric Institute (EEL) Spare Transformer Sharing Agreement (Agreement) in conjunction with the EEL Spare Transformer Equipment Program (STEP). STEP is intended to improve the electric industry's ability to restore reliable electric service following a "Triggering Event," defined as an act of terrorism that destroys or disables one or more substations and results in a declared state of emergency by the President of the United States.

The Agreement provides terms and conditions for transfers of electric transformers between signatories ("Participating Utilities") following a Triggering Event. Minn. Stat. 216B.50 requires public utilities to receive Commission authorization prior to selling, acquiring, leasing, or renting any plant for a total consideration in excess of \$100,000. Transformers are often worth substantially more than this limit, and thus Commission approval would be required for asset transfers MP makes pursuant to this agreement.

Additionally, the Agreement defines a process that determines the number of spare transformers each Participating Utility must hold in inventory, referred to as its "Required Obligation." The Required Obligation is recalculated annually, and thus Participating Utilities may be required to buy additional transformers, even absent a Triggering Event, in order to meet their Required Obligations.

The Minnesota Department of Commerce, Division of Energy Resources (Department) notes that MP's Petition is unusual in that no actual asset transfers are currently being proposed. Rather, MP is, in effect, seeking pre-approval of potential asset transfers pursuant to the Agreement. As will be discussed in greater detail below, the Agreement is intended to assure that, in an emergency, a certain number of spare transformers are available to restore a system to a minimal level of stability. A utility experiencing such an outage will need to be able to act quickly in order to restore reliable service, and pre-approval of

transfers made pursuant to the Agreement will expedite the process by eliminating the need to get regulatory approval prior to selling a spare transformer to a utility in need following a Triggering Event.

The Department notes that Northern States Power Company (Xcel) is a signatory to the Agreement.¹

II. DETAILS OF AGREEMENT

Under the Agreement, transformers are grouped into various classes based on size (megavolt amperes, or MVA) and other characteristics.² The Agreement then creates an “Equipment Class” for each grouping, and each Participating Utility joins one or more Equipment Classes, based on the types of transformers it owns.

For each Equipment Class, an Equipment Subcommittee created and governed by the terms of the Agreement determines the aggregate number of spare transformers to be held in inventory across all Agreement Signatories.³ The aggregate number of spare transformers to be held in inventory for each Equipment Class is called the “MVA Factor” and is set equal to the sum of:

- 1) the “Needed MVA” reported by the Participating Utility with the largest Needed MVA in such Equipment Class and
- 2) the amount of MVA represented by the “Available Spares” reported by the Participating Utility with the largest Needed MVA in such Equipment Class.⁴

“Needed MVA” is defined in the Agreement as the total MVA that a Participating Utility would need in the event that it suffers a Triggering Event that disables its five most critical substations that utilize spare transformers in the relevant Equipment Class (an S-5 contingency).⁵ “Needed MVA” and “Available Spares” are self-reported by Participating Utilities to the Equipment Subcommittees.

The MVA Factor for each Equipment class is then allocated across all Participating Utilities in the Equipment Class using the “Commitment Formula,” which determines each Participating Utility’s Required Obligation for transformers in the Equipment Class. A Participating Utility’s Required Obligation is equal to the MVA Factor multiplied by the simple average of:

- 1) the ratio of the Participating Utility’s Needed MVA to the Aggregate Needed MVA of all Participating Utilities in the Equipment Class, and
- 2) the ratio of the Participating Utility’s Connected MVA to the Aggregate Connected MVA of all Participating Utilities in the Equipment Class.

¹ See Docket No. E002/PA-06-1662 (the Xcel STEP Docket).

² See Exhibit A to the Agreement, contained in Exhibit A to MP’s Petition.

³ See Petition, Exhibit A, pages 2-3.

⁴ See Petition, Exhibit A, page 3.

⁵ See Petition, Exhibit A, page 3.

The Required Obligations of Participating Utilities are recalculated annually.

The Agreement also contains language describing the obligations of utilities to commit transformers to meet their Required Obligations, acquire new transformers if necessary, and maintain spare transformers in accordance with Good Utility Practice as defined by the Agreement.

Article IV of the Agreement governs transactions made pursuant to Triggering Events. In summary, a Participating Utility that loses one or more transformers as a result of a Triggering Event sends a “Call Notice” to another Participating Utility with a spare transformer. The “Call Notice” must demonstrate that the Participating Utility meets the criteria necessary to purchase a transformer pursuant to the Agreement. The Call Notice must certify that the utility is a Participating Utility, met its most recently determined Required Obligation, has suffered the destruction or long-term disabling of one or more transmission substations in connection with a Triggering Event, has tried to remedy the situation using its own spare transformers, and is unable to satisfy an N-O Contingency.⁶

The Participating Utility that receives the Call Notice must sell, or cause to be sold, the transformer that is the subject of the “Call Notice,” subject to certain limitations described in Section 4.3 of the Agreement.

The Agreement specifies the Participating Utility that receives the Call Notice (*i.e.*, the seller) has the sole option of pricing the sale at the sum of (a) either (i) replacement cost or (ii) net book value, plus (b) other expenses (removal, draining of oil, sales tax, transportation costs, etc.). The Agreement defines the purchase price as follows:

“Purchase Price” means the sum of (x) **at the Seller’s sole option, either the Replacement Cost for the subject Qualified Spare Transformer or the Net Book Value of the subject Qualified Spare Transformer**, plus (y) an amount equal to the sum of (i) any “load-out” costs, including any costs of the Seller, or, if applicable, the other owner(s) of such Qualified Spare Transformer, to remove such transformer from its pad, test such transformer and empty it of oil, (ii) any freight and other transportation costs of the Seller, or, if applicable, the other owner(s) of such Qualified Spare Transformer, associated with delivering such transformer to the Buyer, and (iii) the tax liability, if any, of the Seller, or, if applicable, the other owner(s) of such Qualified Spare Transformer, attributable to the sale of the subject Qualified Spare Transformer at the Replacement Cost or Net Book Value, as the case may be. **[emphasis added]**⁷

⁶ An N-O Contingency is defined in the Agreement as a state of the bulk transmission system such that the loss of any single element (N-1), at peak-load conditions, may be expected to result in instability and/or a system in which thermal rating and voltage limits may be exceeded, provided that any such result may reasonably be contained through emergency actions of the transmission operator.

⁷ See Petition, Exhibit A, page 6.

The Agreement also contains provisions related to governance, amendments to the Agreement, dispute resolution, etc. Lastly, the Agreement requires an initial fee of \$10,000 for a new Participating Utility, and annual dues, as well as ongoing dues which are subject to change, but have been \$7,500 annually since STEP was created.⁸

III. DEPARTMENT ANALYSIS

A. STATUTES AND RULES

1. Statutory Requirements

Minn. Stat. §216B.50, subd. 1 states:

No public utility shall sell, acquire, lease, or rent any plant as an operating unit or system in this state for a total consideration in excess of \$100,000, or merge or consolidate with another public utility or transmission company operating in this state, without first being authorized so to do by the commission. Upon the filing of an application for the approval and consent of the commission, the commission shall investigate, with or without public hearing. The commission shall hold a public hearing, upon such notice as the commission may require. If the commission finds that the proposed action is consistent with the public interest, it shall give its consent and approval by order in writing. In reaching its determination, the commission shall take into consideration the reasonable value of the property, plant, or securities to be acquired or disposed of, or merged and consolidated.

This section does not apply to the purchase of property to replace or add to the plant of the public utility by construction. [emphasis added]

As emphasized by the Department, Minn. Stat. §216B.50, subd. 1 does not apply to the purchase of property to replace the plant of a public utility. The Department notes that any purchases MP makes pursuant to the Agreement will be to replace transformers damaged as a result of Triggering Events. Thus the Department concludes that only the potential sale of transformers pursuant to the Agreement by MP falls under the purview of the Commission under Minn. Stat. §216B.50.

Based on the above statute, the Department discusses the reasonableness of MP's proposal, including whether it is consistent with the public interest below. First, however, the Department discusses the filing requirements for property acquisition dockets.

⁸ See MP's Response to DOC IR No. 4, included with these Comments as Attachment No. 1.

2. *Filing Requirements*

Minnesota Rule 7825.1800 contains the filing requirements for property acquisition petitions. Specifically, the rule states:

Petitions for approval to acquire property shall contain one original and three copies of the following information, either in the petition or as exhibits attached thereto:

- A. Petitions for approval of a merger or of a consolidation shall be accompanied by the following: the petition signed by all parties; all information, for each public utility, as required in parts 7825.1400 and 7825.1500; the detailed reasons of the petitions and each party for entering into the proposed transaction, and all facts warranting the same; the full terms and conditions of the proposed merger or consolidation.
- B. Petitions for approval of a transfer of property shall be accompanied by the following: all information as required in part 7825.1400, items A to J; the agreed upon purchase price and the terms for payment and other considerations.
- C. A description of the property involved in the transaction including any franchises, permits, or operative rights, and the original cost of such property, individually or by class, the depreciation and amortization reserves applicable to such property, individually or by class. If the original cost is unknown, an estimate shall be made of such cost. A detailed description of the method and all supporting documents used in such estimate shall be submitted.
- D. Other pertinent facts or additional information that the commission may require.

The Department notes that MP initially filed its Petition as a Miscellaneous Docket, rather than a Property Acquisition (PA) Docket, and thus did not address these filing requirements. However, after MP filed its Petition, the Department reclassified it as a PA Docket and subsequently requested in DOC Information Request (IR) No. 10 that MP address these filing requirements.

Subpart A above applies specifically to mergers and consolidations, and thus is not applicable in the instant Docket.

Subpart B references Minn. Rule 7825.1400, which contains the filing requirements for capital structure petitions, items A to J. In its response to DOC IR No. 10, MP addressed items A to E, and stated that items F to J are not applicable. The Department concludes that

MP has complied with filing requirements A to E, and agrees that items F to J are not applicable.⁹

B. PUBLIC INTEREST ANALYSIS

The Commission previously has established that the public interest standard set forth in Minn. Stat. §216B.50, subd. 1 does not require an affirmative finding of public benefit – just a finding that the transaction does not contravene the public interest, and is compatible with the public interest. The Commission typically uses a balancing test to determine if a transaction is consistent with the public interest, weighing the relative costs and benefits of the transaction.

In its Petition, MP stated that the Agreement is in the public interest for the following reasons:

- it provides a guarantee with respect to MP's continuous operation in the occurrence of a Triggering Event by being able to rely on the STEP Agreement should an event occur on MP's system;
- the Agreement allows MP to expedite a spare transformer to a sister utility in need, without potential delays as a result of regulatory pre-approval;
- the Agreement assures that a certain number of transformers are guaranteed to be made available at the time of a Triggering Event; and
- the Agreement supports the timely reconnection of the grid during a significant outage event and ensures that the required repairs will be made at a reasonable price due to the collective nature of the cost distribution to the Participating Utilities.

The Department notes that one of the benefits of the Agreement highlighted by MP – that it allows MP to expedite a spare transformer to a sister utility in need – is not a benefit to MP or its ratepayers. Rather, it is a benefit to other Participating Utilities and their ratepayers, and is perhaps more appropriately viewed as a cost to MP. Additionally, the Department notes that the assurance that a certain number of transformers will be available at the time of Triggering Event is a benefit when viewed in the aggregate, across all Participating Utilities. However, if the responsibility for holding spare transformers is not allocated fairly across Participating Utilities, it is possible that some utilities will end up subsidizing other utilities by holding more than their fair share of spare transformers. As will be discussed in greater detail below, the Department has some concerns that the Agreement may put MP and its ratepayers in a position where they are forced to subsidize other Participating Utilities.

Thus, the Agreement may simultaneously be in the public interest while harming MP's ratepayers. In instances where the public interest and the interest of a specific utility (and

⁹ See Department Attachment No. 2.

its ratepayers) may not be aligned, the Commission has often imposed conditions to protect the utility's ratepayers from harm.¹⁰

Below, the Department first analyzes whether MP's participation in the Agreement is in the public interest generally, and then analyzes whether MP's participation in the Agreement will harm its ratepayers.

1. Whether the Agreement is in the Public Interest

As noted by MP on page five of its Petition, the Federal Energy Regulatory Commission (FERC) determined that the Agreement is prudent as it makes efficient use of the industry's existing spare transformers. The Department concludes that the Agreement is in the public interest, as it improves Participating Utilities' recovery capability if there is a Triggering Event, with a reduced burden on any single utility to acquire spare transformers.

Based on its analysis, the Department agrees with the FERC, and concludes that the Agreement is consistent with the public interest.

2. Whether the Agreement will Harm MP's Ratepayers

To determine whether the MP's participation in the Agreement will harm MP's ratepayers, the Department assesses the benefits and costs of the Agreement to MP. The Department divides the benefits and costs into two broad categories: first, benefits and costs associated with transactions pursuant to Triggering events; and second, benefits and costs associated with participation in the Agreement, but not directly related to Triggering events.

a. Benefits and Costs of Transactions Pursuant to Triggering Events

Should MP suffer a Triggering Event that disables transformers such that the Company's transmission system is in an N-1 contingency or worse, and MP does not have enough available spares to restore its system to N-0 contingency status, MP will benefit from its participation in the Agreement by having access to spares held by other utilities. Thus, the Agreement will provide a form of insurance against long-term transmission outages resulting from terrorist attacks. It is unclear, however, how much value MP and its ratepayers will derive from this increased access to transformers. To quantify that value would require an estimate of the probability MP will suffer a Triggering Event that disables enough transformers to cause MP's transmission system to be in an N-1 contingency or worse.

As noted above, if MP purchases a transformer following a Triggering Event, the seller will have the option to price the transformer at either net book value or replacement cost. Many spare transformers are currently in service and operational, but considered to be redundant. Because they are in service, they are being depreciated, and therefore in an emergency MP may be forced to buy a partially depreciated transformer for the price a brand new transformer.

¹⁰ See, for example, Docket No. G004/PA-06-1585.

The Department, however, is largely unconcerned about this potential “overpayment” for two reasons. First, if MP is in an N-1 contingency or worse, the premium associated with replacement cost over net book value or market value will likely be worth paying in exchange for the increased speed with which the Agreement will allow MP to restore its transmission system to N-0 status. New transformers can have long lead times, which will be eliminated by participation in the Agreement. Second, the Department expects that Triggering Events that cause MP to purchase transformers will be rare, and may never occur.

In the event that MP is required to *sell* a transformer to another Participating Utility, it will have the option of pricing the transformer based on net book value or replacement cost. As discussed in the Xcel STEP Docket, the Department has some concerns that MP’s ratepayers may be harmed if MP prices its transformers using net book value.¹¹ Specifically, a transformer’s net book value may be less than both its market value and its replacement cost. If that were the case, and MP were to sell a transformer for net book value, MP’s ratepayers would effectively be subsidizing another utility that had suffered a terrorist attack by forgoing a gain on the sale of the transformer, which would flow through to ratepayers via reduced depreciation expense in the future.

In order to protect MP’s customers from this potential harm, the Department recommends that the Commission require MP to use replacement cost for any transformers sold following a Triggering Event pursuant to the Agreement. The Commission imposed the same requirement on Xcel in the Xcel STEP Docket.¹² The Department notes that Staff Briefing Papers in the Xcel STEP Docket make clear that even though the Commission’s Order specifies transfer at replacement cost, Xcel is not prevented from asking for special treatment based on the specific facts at the time of a transfer. Similarly, MP would not be prevented from requesting different treatment in the future based on the specific facts at the time.

In order to monitor how the Agreement works for MP in practice, the Department also recommends that the Commission require MP, following transfers pursuant to Triggering Events (both purchases and sales), to report in its next jurisdictional annual report the type of equipment transferred, the purchase price, the counterparty, and any other details the Company deems relevant.

b. Benefits and Costs Not Directly Related to Triggering Events

As noted above, the Agreement requires new members to pay a one-time initial fee of \$10,000, as well as ongoing dues which are subject to change, but have been \$7,500 annually since STEP was created. If these fees are the only costs MP incurs pursuant to the Agreement, the Department concludes that they are reasonable.

¹¹ The Commission also addressed issues related to using a transformer’s net book value as its sale price in Docket No. E002/PA-05-82. See, for example, pages 1-2 of Staff Briefing Papers, dated May 5, 2005, in that Docket.

¹² See the Commission’s April 4, 2007 Order in Xcel’s STEP Docket.

However, MP might incur additional costs as a result of being required to carry additional spare transformers in its inventory, based on the results of the Commitment Formula described above. MP stated in its response to DOC IR 3 that it expects to be able to meet its initial Required Obligation with existing inventory.¹³ Thus, it is the Department's understanding that in the short-term, no changes in MP's inventory of spare transformers are expected. In the long-term, however, it is not clear to the Department whether to expect MP's Required Obligation to be larger or smaller than the inventory of spare transformers the Company would hold absent the agreement. Part of this lack of clarity stems from the Department's inability to understand the logic behind the calculation of the MVA Factor, which serves as the target level of inventory for each Equipment Class.

As noted above, the MVA Factor for an Equipment Class is, in part, a function of the Available Spares of the Participating Utility with the largest Needed MVA in the Equipment Class. The larger the inventory of spares held by the Participating Utility with the largest Needed MVA, the larger the MVA Factor will be. And the larger the MVA Factor, the larger the Required Obligations of all Participating Utilities in an Equipment class will be. To the Department, this seems backwards: number of available spares should be a function of target level of inventory, not the other way around.

Thus, the Department is concerned that the MVA Factor does not set a reasonable target level of spare transformers. If the Participating Utility with the largest Needed MVA decides to increase its inventory of available spares above and beyond its Required Obligation, MP's Required Obligation will rise as well, despite the fact that there would be no additional risk associated with a triggering event. Similarly, the impact on MP would be the same if a new utility joins with a Needed MVA that is larger than any current Participating Utility's Needed MVA, and a large inventory of spares. In this sense, the MVA Factor may be somewhat arbitrary.

Additionally, the Department has some minor concerns related to the Commitment Formula, and whether it reasonably allocates shares of the MVA Factor across Participating Utilities in each Equipment Class. As noted above, the Commitment Formula allocates a portion of the MVA Factor to each Participating Utility in an Equipment Class using the simple average of:

- 1) the ratio of the Participating Utility's Needed MVA to the Aggregate Needed MVA of all Participating Utilities in the Equipment Class, and
- 2) the ratio of the Participating Utility's Connected MVA to the Aggregate Connected MVA of all Participating Utilities in the Equipment Class.

The Department concludes that this allocation is generally reasonable, because a Participating Utility's Required Obligation is positively related to both its relative vulnerability (measured by the first factor listed) as well as its relative overall size (measured by the second factor). The Department notes, however, that it is possible that application of the Commitment Formula could result in a Participating Utility being assigned a Required Obligation that is greater than its Needed MVA (which, again, is the MVA required for the

¹³ See Department Attachment No. 3.

Participating Utility to restore service to N-0 status following a Triggering Event that disables its five most critical substations). As part of DOC IR No. 11, the Department prepared an example calculation demonstrating how this could happen.¹⁴

In response to this example, MP stated that the Department's example is not realistic and is not indicative of the actual results experienced by any of the current Participating Utilities. MP, however, stated that the data necessary to support this assertion is confidential and the Company was therefore unable to provide it to the Department. In response to the Department's concerns about the MVA Factor, as well as the Department's example, MP stated, in an e-mail supplementing its response to DOC IR 11, that:

[The Commitment Formula] is intended to equitably apportion the responsibility to meet the needs of each Equipment Class among Participating Utilities so that each Participating Utility has a reasonable Required Obligation. The Commitment Formula has historically met this intended goal. In general, larger Participating Utilities have greater needs and larger Required Obligations. **Additionally, Participating Utilities Required Obligations have generally remained consistent over time, and in many cases, have decreased as new Participating Utilities are added to each voltage class.**

The anticipated Required Obligation for MP in its Equipment Class would require it to Commit one (1) transformer to the program. MP has an existing in-service transformer that it plans to Commit to satisfy this Required Obligation. As a result, MP would not be required to acquire a new transformer to meet its anticipated Required Obligation. By making this Commitment of one (1) transformer, MP will have access to a significant number of other transformers should a Triggering Event occur. **[emphasis added]**

Based on this, the Department concludes that the risk of costly future inventory additions to meet increasing Required Obligations is low. For now it appears that the only costs associated with the Agreement will be the minimal fees noted above, in exchange for which MP will receive insurance against extended transmission outages resulting from terrorist attacks.

However, based on the Department's concerns, the Department recommends that the Commission impose reporting requirements on MP related to its Required Obligation under the Agreement. In particular, the Department recommends that the Commission require MP, following any purchases of plant made to satisfy the Company's Required Obligation under the Agreement, to report in its next jurisdictional annual report the type of equipment acquired and its cost, as well as any other details the Company deems relevant.

¹⁴ See Department Attachment No. 4.

Additionally, the Department recommends that the Commission require MP to demonstrate, in the event it is required to add to its inventory of spare transformers in order to meet its Required Obligation, that its ongoing participation in the Agreement is reasonable, and does not harm its ratepayers.

c. Conclusion Regarding Impacts on MP's Ratepayers

The Department concludes that MP's ratepayers will benefit from increased reliability as a result of the Company's participation in the Agreement. However, the value to ratepayers of that increased reliability is unclear, as it is in part a function of the probability that MP suffers a Triggering Event on its system. The probability of such an event on MP's system is likely to be small, and therefore the value to ratepayers is likely to be low.

As a result, the costs to MP's ratepayers should also be small to protect MP's ratepayers. The Department concludes that MP's ratepayers will be unharmed as long as the following conditions are met:

- MP prices sales of transformers following triggering events based on replacement cost, and
- ongoing costs are limited to the minimal fees described above, and MP's Required Obligation does not increase such that MP is forced to add to its inventory of spare transformers.

If MP's Required Obligation increases such that the Company is forced to add to its inventory of spare transformers, the Company will need to re-evaluate the benefits and costs of continued participation in the Agreement, and justify its continued participation if and when it seeks cost recovery for the additional transformers.

IV. RECOMMENDATIONS

The Department recommends that the Commission:

- approve future sales of property by MP pursuant to the EEI Spare Transformer Sharing Agreement;
- require MP to price any transformer sold pursuant to the Spare Transformer Sharing Agreement using the transformer's replacement cost;
- require MP, following transfers pursuant to triggering events (both purchases and sales), to report in its next jurisdictional annual report the type of equipment transferred, the purchase price, the counterparty, and any other details the Company deems relevant;
- require MP, following any purchases of plant made to satisfy the Company's Required Obligation under the Agreement, to report in its next jurisdictional annual report the type of equipment acquired and its cost, as well as any other details the Company deems relevant; and

- require MP to demonstrate, in the event it is required to add to its inventory of spare transformers in order to meet its Required Obligation, that its ongoing participation in the Agreement is reasonable, and does not harm its ratepayers.

/lt

- c. Yes. We would seek these costs to be included in base rates when we file our next rate case.

Response by: Robert Sandstrom
Title: Manager - Power Delivery Engineering
Department: Power Delivery Engineering
Telephone: 218-355-2558

List sources of information:

- E. Verified Statement: *See* attached.
- F. Purpose of Securities Issuance: Not Applicable
- G. Copies of Authorizing Resolution(s): Not Applicable
- H. Statement of Affiliated Interest: Not Applicable
- I. Opinion of Counsel: Not Applicable
- J. Financial Statements: Not Applicable

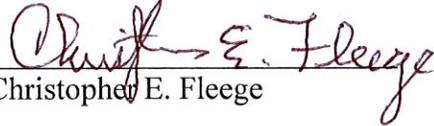
Response by: Christopher D. Anderson
Title: Associate General Counsel
Department: Legal Services
Telephone: 218-723-3138

List sources of information:

STATE OF MINNESOTA)
) ss
COUNTY OF ST. LOUIS)

AFFIDAVIT

Christopher E. Fleege, being first duly sworn, deposes and says that he is Vice President Transmission & Distribution of the Company; that he has read the foregoing Petition and knows the contents thereof; and that the statements therein are true and correct to the best of his knowledge and belief.


Christopher E. Fleege

Subscribed and sworn to before
me this 29th day of May, 2015.



Notary Public - Minnesota
My Commission Expires January 31, 2020



State of Minnesota
DEPARTMENT OF COMMERCE
DIVISION OF ENERGY RESOURCES

Nonpublic
Public

Utility Information Request

Docket Number: E015/M-15-375

Date of Request: 5/14/2015

Requested From: Christopher Anderson, Minnesota Power

Response Due: 5/25/2015

Analyst Requesting Information: Craig Addonizio

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

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

Request No.	
3	<p>Reference: Required Obligation</p> <p>a. The Department's understanding is that MP will have a grace period with respect to meeting its Required Obligation under the Agreement. From the date MP becomes a Participating Utility until the time of the first subsequent Measurement Date, MP will not be required to add any transformers to its inventory pursuant to the Agreement. However, on the first Measurement Date following the date MP becomes a Participating Utility, MP will be required to have committed enough spare transformers to meet or exceed its Required Obligation. Does MP anticipate that it will be required to acquire additional transformers by the first Measurement Date in order to meet its Required Obligation? If so, please provide further details on the number, type, size and cost of the additional transformers that will be required.</p> <p>b. Please explain generally how MP plans to meet its Required Obligation on its first measurement date (e.g., with existing transformer inventory, redundant existing transformers, newly acquired transformers, etc.).</p> <p>c. Does MP expect to incur additional maintenance costs (to maintain spare transformers) in order to comply with the terms of the Agreement?</p>

RESPONSE:

a. No

Response by: Robert Sandstrom
Title: Manager - Power Delivery Engineering
Department: Power Delivery Engineering
Telephone: 218-355-2558

List sources of information:

Page 2 of 2 b. *Minnesota Power will meet the required obligation with existing transformer inventory (in-service spare).*

c. No

Response by: Robert Sandstrom
Title: Manager - Power Delivery Engineering
Department: Power Delivery Engineering
Telephone: 218-355-2558

List sources of information:

State of Minnesota
DEPARTMENT OF COMMERCE
DIVISION OF ENERGY RESOURCES

Nonpublic
Public

Utility Information Request

Docket Number: E015/PA-15-375

Date of Request: 6/2/2015

Requested From: Christopher Anderson, Minnesota Power

Response Due: 6/12/2015

Analyst Requesting Information: Craig Addonizio

Type of Inquiry: []..... Financial []..... Rate of Return []..... Rate Design
 []..... Engineering []..... Forecasting []..... Conservation
 []..... Cost of Service []..... CIP [X]..... Financial

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

Request No.	
11	<p>Reference: Required Obligation and Commitment Formula</p> <p>a. Please explain MP's understanding of the logic behind the Commitment Formula used to calculate each Participating Utility's Required Obligation, as defined on pages 2-3 of the Agreement (Exhibit A to MP's Petition).</p> <p>b. It is the Department's understanding that the sum of the Required Obligations of all Participating Utilities in an Equipment Class will be equal to the "MVA Factor" for that class. The MVA Factor is defined as the sum of the Needed MVA reported by the Participating Utility with the largest Needed MVA in such Equipment Class and the amount of MVA represented by the Available Spares reported by such Participating Utility. If the Department's understanding is incorrect, please explain why. If the Department's understanding is correct, please answer the following questions:</p> <p>i. Please explain why the MVA Factor as defined makes sense to use as an aggregate inventory target for an Equipment Class? In particular, why include the available spare MVA of the Participating Utility with the largest Needed MVA?</p> <p><i>Continued on next page</i></p>

Response by: Robert Sandstrom
Title: Manager - Power Delivery Engineering
Department: Power Delivery Engineering
Telephone: 218-355-2558

List sources of information:

If, in the first year the Agreement was in effect, the Participating Utility with the largest Needed MVA had only a small inventory of spare transformers (i.e. few MVA), would the inventory target have been set too low? Conversely, if the Participating Utility had an unnecessarily large inventory of spare transformers, would the target have been set too high?

- ii. Please explain whether the Commitment Formula is intended to directly reflect the probability of Triggering Events that damage one or more transformers. The Department would have expected some sort of probabilistic analysis to be included in the determination of Required Obligations.
- c. Please review the hypothetical example in the Attachment to this IR (“Required Obligation Example.xlsx”). In the example, the Department constructed a simplified application of the Commitment Formula with five utilities. One of the utilities, Utility A, starts out with fewer spare MVA than it would need to recover from and S-5 contingency. Utility B starts with a small amount of excess inventory, and the other three start out with no surplus or deficit relative to Needed MVA. Over time, based on the Commitment Formula, Utility A, which started out with an inventory deficit, consistently has a Required Obligation that is less than its Needed MVA, and the other four utilities have Required Obligations that are greater than their Needed MVA. It appears that, in effect, Utilities B, C, D, and E do not benefit from participation in the Agreement, and in fact are harmed because they are forced to hold extra inventory on behalf of Utility A. If the Department’s example is incorrect or otherwise inappropriate, please explain why. If the Department’s example is correct, please explain whether this would be the intended result of the agreement, and why it would be a reasonable outcome.
- d. If available, please provide any actual calculations of Required Obligations performed pursuant to the Agreement (i.e. please provide any actual copies of Exhibit B to the Agreement along with the supporting calculations).

Response:

- a. The Commitment Formula was developed as part of a long-term, collaborative process involving approximately 50 utilities negotiating the terms of the Sharing Agreement. The Commitment Formula ultimately adopted was intended to take into account the aggregate needs of each Equipment Class as well as the individual needs of each Participating Utility.

Response by: Robert Sandstrom
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Department: Power Delivery Engineering
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List sources of information:

Page 3 of 4b. (i.) The MVA Factor, as a component of the Commitment Formula, was developed as part of a long-term, collaborative process involving approximately 50 utilities negotiating the terms of the Sharing Agreement. Taking into account the aggregate needs of each Equipment Class, and the available spare MVA of the Participating Utility with the largest Needed NVA, helps to ensure that the program is robust enough to meet even the needs of the Participating Utility with the largest Needed MVA.

(ii.) The Commitment Formula was developed as part of a long-term, collaborative process involving approximately 50 utilities negotiating the terms of the Sharing Agreement. A probability analysis did not form the basis for any such negotiation.

- c. The hypothetical example provided is not a realistic example and is not indicative of the actual results experienced by any of the current Participating Utilities.
- d. Required Obligation calculations are confidential information that is protected from disclosure under the terms of the Sharing Agreement. It is Minnesota Power's current understanding that its anticipated Required Obligation in the Equipment Class it plans to join would require Minnesota Power to commit one (1) Qualified Spare Transformer. In exchange for this Commitment, Minnesota Power will be entitled to access multiples over the MVA represented by Minnesota Power's Committed Qualified Spare Transformer should a Triggering Event occur.

Response by: Robert Sandstrom
Title: Manager - Power Delivery Engineering
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List sources of information:

Attachment to DOC IR 11 Example of MVA Factor and Commitment Formula

Participating Utility	YEAR: 0					YEAR: 1				
	Needed MVA	Connected MVA	Available		Required Obligation	Needed MVA	Connected MVA	Available		Required Obligation
			Spare MVA	MVA Factor				Spare MVA	MVA Factor	
Utility A	500	1,100	200	700	319	500	1,100	319	819	373
Utility B	100	500	150	700	95	100	500	150	819	111
Utility C	100	500	100	700	95	100	500	100	819	111
Utility D	100	500	100	700	95	100	500	100	819	111
Utility E	100	500	100	700	95	100	500	100	819	111
Aggregate Needed MVA	900					900				
Aggregate Connected MVA		3,100					3,100			
Aggregate Available Spare MVA			650					769		
Aggregate Required Obligation					700					819

Participating Utility	YEAR: 2					YEAR: 3				
	Needed MVA	Connected MVA	Available		Required Obligation	Needed MVA	Connected MVA	Available		Required Obligation
			Spare MVA	MVA Factor				Spare MVA	MVA Factor	
Utility A	500	1,100	373	873	397	500	1,100	397	897	408
Utility B	100	500	150	873	119	100	500	150	897	122
Utility C	100	500	111	873	119	100	500	119	897	122
Utility D	100	500	111	873	119	100	500	119	897	122
Utility E	100	500	111	873	119	100	500	119	897	122
Aggregate Needed MVA	900					900				
Aggregate Connected MVA		3,100					3,100			
Aggregate Available Spare MVA			857					904		
Aggregate Required Obligation					873					897

Participating Utility	YEAR: 4					YEAR: 5				
	Needed MVA	Connected MVA	Available		Required Obligation	Needed MVA	Connected MVA	Available		Required Obligation
			Spare MVA	MVA Factor				Spare MVA	MVA Factor	
Utility A	500	1,100	408	908	414	500	1,100	414	914	416
Utility B	100	500	150	908	124	100	500	150	914	124
Utility C	100	500	122	908	124	100	500	124	914	124
Utility D	100	500	122	908	124	100	500	124	914	124
Utility E	100	500	122	908	124	100	500	124	914	124
Aggregate Needed MVA	900					900				
Aggregate Connected MVA		3,100					3,100			
Aggregate Available Spare MVA			925					935		
Aggregate Required Obligation					908					914

Participating Utility	YEAR: 6					YEAR: 7				
	Needed MVA	Connected MVA	Available		Required Obligation	Needed MVA	Connected MVA	Available		Required Obligation
			Spare MVA	MVA Factor				Spare MVA	MVA Factor	
Utility A	500	1,100	416	916	417	500	1,100	417	917	417
Utility B	100	500	150	916	125	100	500	150	917	125
Utility C	100	500	124	916	125	100	500	125	917	125
Utility D	100	500	124	916	125	100	500	125	917	125
Utility E	100	500	124	916	125	100	500	125	917	125
Aggregate Needed MVA	900					900				
Aggregate Connected MVA		3,100					3,100			
Aggregate Available Spare MVA			939					941		
Aggregate Required Obligation					916					917

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. E015/PA-15-375

Dated this 22nd day of June 2015

/s/Sharon Ferguson

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