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**PUBLIC DOCUMENT**  
**TRADE SECRET DATA EXCISED**

April 9, 2018

**VIA E-FILING**

Daniel P. Wolf  
Executive Secretary  
Minnesota Public Utilities Commission  
121 7th Place East, Suite 350  
St. Paul, MN 55101-2147

Re: In the Matter of Minnesota Power's Rider  
for Boswell Unit 4 Emission Reduction  
(BEC4 Rider) and 2018 Factor  
**Docket No. E015/M-18-\_\_\_**

Dear Mr. Wolf:

Minnesota Power hereby electronically submits the attached Petition seeking Minnesota Public Utilities Commission approval of its 2018 Boswell Unit 4 Emission Reduction Factor. This Petition is filed pursuant to Minn. Stat. § 216B.1692 for cost recovery of investments, expenditures and costs related to the Boswell Energy Center Unit 4 mercury emission reduction project through Minnesota Power's Rider for Boswell Unit 4 Emission Reduction.

Minnesota Power has included a Summary with this filing. As reflected in the attached Affidavit of Service, the Summary has been filed on the official general service list utilized by Minnesota Power.

Please contact me at (218) 355-3601 or [lhoyum@mnpower.com](mailto:lhoyum@mnpower.com) with any questions related to this matter.

Yours truly,

Lori Hoyum  
Policy Manager

LH:sr  
Enc.

STATEMENT REGARDING JUSTIFICATION FOR EXCISING  
TRADE SECRET INFORMATION

Pursuant to the Commission's revised Procedures for Handling Trade Secret and Privileged Data in furtherance of the intent of Minn. Stat. § 13.37 and Minn. Rule 7829.0500, Minnesota Power has designated footnote 4 on Exhibit B-2 as Trade Secret. Minnesota Power has removed certain information from the footnote to prevent disclosure of cost data related to the power sale agreement with Basin Power Electric Cooperative.

The disclosure of this information would be materially harmful to Minnesota Power because it provides confidential business information to competitors and potential power sale counterparties to the detriment of customers. This is highly confidential information; Minnesota Power's competitors, as well as its potential suppliers, would gain a commercial advantage over Minnesota Power if this information were publicly available. Minnesota Power follows strict internal procedures to maintain the secrecy of this information in order to capitalize on the economic value of the information for Minnesota Power's customers. Public availability of this information could economically harm Minnesota Power and its customers in terms of energy supply provision or acquisition. Minnesota Power and its customers would suffer in providing resources to its retail load.

Minnesota Power respectfully requests the opportunity to provide additional justification in the event of a challenge to the trade secret designation provided herein.

**STATE OF MINNESOTA  
BEFORE THE  
MINNESOTA PUBLIC UTILITIES COMMISSION**

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In the Matter of Minnesota Power’s Rider  
for Boswell Unit 4 Emission Reduction  
(BEC4 Rider) and 2018 Factor

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Docket No. E015/M-18-\_\_\_\_\_

**SUMMARY OF FILING**

Minnesota Power submits this Petition to the Minnesota Public Utilities Commission (“Commission”) pursuant to Minn. Stat. § 216B.1692 seeking Commission approval to update cost recovery of investments, expenditures and costs related to the Boswell Energy Center Unit 4 mercury emission reduction project through Minnesota Power’s Commission-approved Rider for Boswell Unit 4 Emission Reduction.

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**STATE OF MINNESOTA  
BEFORE THE  
MINNESOTA PUBLIC UTILITIES COMMISSION**

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In the Matter of Minnesota Power’s Rider  
for Boswell Energy Center Unit 4 Emission  
Reduction (BEC4 Rider) and 2018 Factor

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Docket No. E015/M-18-\_\_\_\_\_

**I. INTRODUCTION**

Minnesota Power (or “the Company”) submits this Petition to the Minnesota Public Utilities Commission (“Commission”) pursuant to Minn. Stat. § 216B.1692 seeking Commission approval to update cost recovery of investments, expenditures and costs related to the Boswell Energy Center Unit 4 (“BEC4”) mercury emission reduction project (“BEC4 Project”) through Minnesota Power’s Commission-approved Rider for Boswell Unit 4 Emission Reduction (“BEC4 Rider”). Specifically, the Company is requesting:

- Commission approval to implement the updated BEC4 Rider factor shown in Exhibit A-1 coincident with the implementation of final rates in Minnesota Power’s current general rate review case.<sup>1</sup>
- Commission provisional approval to zero out the rider sub-factor effective June 1, 2018.

On November 2, 2016, Minnesota Power filed a request with the Commission to increase its rates for electric utility service. For the general rate case, most of the BEC4 Project costs were rolled into base rates. Also, the Company split the current 2015 BEC4 Rider bill factor into two sub-factors: a base rate sub-factor and a rider sub-factor. The split in the bill factor was based on the originally-designed rate and the original revenue requirements as shown in Exhibit A-2, page 1. This allowed the base rate sub-factor revenue to largely offset the BEC4 costs rolled into base rates, while at the same time it allowed the rider sub-factor revenue to be treated as continuing rider revenue to credit the continuing rider revenue requirements and tracker balance.<sup>2</sup>

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<sup>1</sup> Docket No. E015/GR-16-664. In the Matter of the Application of Minnesota Power for Authority to Increase Rates for Electric Utility Service in Minnesota. Implementation of final rates is expected in fourth quarter 2018.

<sup>2</sup> The rider sub-factor is not subject to an interim and general rate increase. Refer to MP Exhibit 040 Herbert G. Minke Direct Testimony filed on November 2, 2016.

As shown in Exhibit B-1, page 2, by the end of 2017, the Company collected its 2014 to 2017 rider revenue requirements and tracker balances and now is slightly over collecting. The large credit to revenue requirements associated with Basin Electric Power Cooperative's ("Basin") share of the BEC4 project costs results in an overall negative net revenue requirement from 2017 until the end of Basin's contract in April 2020. Because of this, the BEC4 Factor will be a negative factor through this time period. To avoid over-collection and minimize the buildup of the negative revenue requirement while waiting for the implementation of final rates, the Company believes it is appropriate to zero out the rider sub-factor to provide all customers with a modest rate decrease. Then, coincident with the implementation of final rates, the newly proposed 2018 BEC4 Rider Factor would be implemented and result in a rate reduction for all customers. This rate reduction will offset about half of the simultaneous general rate increase for residential customers and it will largely offset the increase for Large Power customers.

In order to provide timely rate relief for all customers as well as avoiding over-collection while waiting for implementation of final rates, Minnesota Power requests that the Commission waive the requirements of Minn. Rule 7825.3200, which requires that utilities serve notice to the Commission at least 90 days prior to the proposed effective date of modified rates. The Company is requesting that the Commission waive the 90 day requirement and grant provisional approval of its request in this petition to zero out the rider sub-factor effective June 1, 2018. Because this will result in a decrease in customer bills and avoid over-collection, the Company believes it is appropriate to grant provisional approval, with the understanding that a final decision would be made subsequent to a comment period in which parties may conduct a thorough review of the petition. Under Minn. Rule 7829.3200, the Commission shall grant a variance to its rules when it determines that the following requirements are met:

- a. enforcement of the rule would impose an excessive burden upon the applicant or others affected by the rule;
- b. granting the variance would not adversely affect the public interest; and
- c. granting the variance would not conflict with standards imposed by law.

In this instance, enforcement of the rule would obviate Minnesota Power's desire to achieve the lower rates for customers as of June 1, 2018, on a provisional basis and subject to full Commission review and approval. Enforcement of the Rule requiring 90-day notice would impose

an excessive burden, considering that Minnesota Power can true-up any differences in approved rates under the 2018 BEC4 Factor. Minnesota Power is not aware of any reason why granting the variance in this instance would adversely affect the public interest and would directly benefit customers. Granting of the variance would also not conflict with standards imposed by law or rules governing the Commission's actions and is consistent with prior Commission decisions on Minnesota Power's electric service agreements.

A similar provisional approval was granted in Minnesota Power's petition for approval of its 2017 Renewable Resource Rider (Docket No. E015/M-16-776), as well as Otter Tail Power Company's petition for approval of its environmental upgrades cost recovery rider (Docket No. E017/M-16-373) and transmission cost recovery rider annual adjustment (Docket No. E017/M-16-374). In these petitions, Minnesota Power and Otter Tail Power Company requested cost recovery factors which would decrease rates for customers. In response to Minnesota Power's request, the Minnesota Department of Commerce Division of Energy Resources ("Department") proposed that the Commission grant provisional approval stating, "*[t]he DOC generally does not support the implementation of new rider rates on a provisional basis. However, given the overlap between riders and base rates (including interim rates), and the interconnection between this petition and MP's recently filed a rate case, the DOC supports MP's request to implement its 2017 Renewable Factors on a provisional basis beginning January 1, 2017.*"<sup>3</sup> In response to Otter Tail Power's request, the Department proposed that the Commission grant provisional approval in order to provide rate reductions to customers at a time when extensive workload and resource constraints were presenting a significant barrier to the Department's ability to thoroughly review the petitions.<sup>4</sup>

On August 31, 2012, Minnesota Power submitted its Boswell Energy Center Unit 4 mercury emission reduction plan petition ("BEC4 Plan") in compliance with Minn. Stat. § 216B.6851 to the Commission and Minnesota Pollution Control Agency ("MPCA"). The BEC4 Plan is a multi-pollutant solution for reducing mercury, particulate matter ("PM"), sulfur dioxide ("SO<sub>2</sub>"), and other hazardous air pollutants being addressed by United States Environmental

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<sup>3</sup> Page 2 of the Department's Letter dated November 22, 2016, in Docket No. E015/M-16-776.

<sup>4</sup> If provisional approval is not granted to zero out the rider sub-factor on June 1, 2018, the Company estimates it will over collect an additional \$1.9 million, assuming the new 2018 billing factors will be implemented on December 1, 2018. The additional \$1.9 million in over collection would go to the tracker balance and would not be returned to customers until the subsequent 2019 billing factors are implemented.

Protection Agency (“EPA”) regulations while also reducing plant wastewater. As part of the BEC4 Plan, the Company installed a semi-dry flue gas desulfurization system, fabric filter and powder activated carbon (“PAC”) injection system to help achieve compliance with the Minnesota Mercury Emissions Reduction Act (“MERA”), the EPA Mercury and Air Toxics Rule (“MATS”), and other enacted or pending federal and state environmental rulemakings regulating air and water emissions and solid byproducts from coal-fired power plants. Through multi-pollutant control technology, Minnesota Power will cost-effectively achieve the mercury reduction goals under MERA while ensuring compliance with other regulatory programs over the long term.

On March 7, 2013, Minnesota Power submitted its Petition seeking Commission approval pursuant to Minn. Stat. §§ 216B.683, subd. 1; 216B.686, subd. 2; and 216B.1692, subd. 3 to recover investments and expenditures associated with the BEC4 Project through the BEC4 Rider.

On November 5, 2013, the Commission approved Minnesota Power’s BEC4 Project and established the BEC4 Rider through an order approving recovery of investments and expenditures for the BEC4 Project in Docket No. E015/M-12-920.

On December 20, 2013, Minnesota Power filed a Petition with the Commission requesting approval of its proposed rates for the BEC4 Rider.<sup>5</sup> On July 2, 2014, the Commission issued an order approving Minnesota Power’s proposed rates through the BEC4 Rider. On August 1, 2014, Minnesota Power began implementing Boswell 4 Plan Adjustment factors and recovering costs on customers’ bills.

On November 26, 2014, Minnesota Power filed a Petition with the Commission requesting approval of its 2015 Boswell 4 Plan Adjustment factors.<sup>6</sup> On August 24, 2015, the Commission issued an order approving Minnesota Power’s 2015 Boswell 4 Plan Adjustment factors. The approved factor was applied to customer bills effective September 1, 2015.

On September 30, 2015, Minnesota Power filed a Petition with the Commission requesting approval of its 2016 Boswell 4 Plan Adjustment factors.<sup>7</sup> On December 21, 2016, the Commission issued an order approving Minnesota Power’s 2016 Boswell 4 Plan Adjustment factors; however, on January 12, 2017, the Company submitted a letter to the Commission indicating the 2016 factors would not be implemented to avoid over-collection in 2017 and to not further complicate the 2016

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<sup>5</sup> See Docket No. E015/M-13-1166.

<sup>6</sup> See Docket No. E015/M-14-990.

<sup>7</sup> See Docket No. E015/M-15-876.



general rate case (Docket No. E015/GR-16-664). The Commission approved the Company's request in an order dated March 22, 2017.

## II. PROCEDURAL MATTERS

Pursuant to Minn. Stat. §§ 216B.683; 216B.1692; 216B.6851, 216B.686; and 216B.16, subd. 1, and Minn. Rule 7829.1300, Minnesota Power provides the following required general filing information.

### 1. Summary of Filing (Minn. Rule 7829.1300, subp. 1)

A one-paragraph summary accompanies this petition.

### 2. Service on Other Parties (Minn. Rule 7829.1300, subp. 2)

Pursuant to Minn. Stat. § 216.17, subd. 3 and Minn. Rules 7829.1300, subp. 2, Minnesota Power eFiles a copy of this Petition on the Department of Commerce - Division of Energy Resources, and the Minnesota Office of the Attorney General – Antitrust and Utilities Division. A summary of the filing prepared in accordance with Minn. Rules 7829.1300, subp. 1 is being served on Minnesota Power’s general service list.

### 3. Name, Address and Telephone Number of Utility (Minn. Rule 7829.1300, subp. 4(A))

Minnesota Power  
30 West Superior Street  
Duluth, MN 55802  
(218) 722-2641

### 4. Name, Address and Telephone Number of Utility Attorney (Minn. Rule 7829.1300, subp. 4(B))

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**5. Date of Filing and Date Proposed Rate Takes Effect (Minn. Rule 7829.1300, subp. 4(C))**

This Petition is being filed on April 9, 2018. The proposed effective date of the BEC4 Plan Adjustment is December 1, 2018, or coincident with implementation of final rates in the Company's current rate review; however, the Company also proposed a provisional effective date of June 1, 2018, to zero out the rider sub-factor.

**6. Statute Controlling Schedule for Processing the Filing (Minn. Rule 7829.1300, subp. 4(D))**

This Petition is made pursuant to Minn. Stat. §§ 216B.683, 216B.1692, 216B.6851, 216B.686 and 216B.16. Minn. Stat. § 216B.1692 allows Minnesota Power to recover the costs of the BEC4 Plan through the Commission-approved BEC4 Rider. Minn. Stat. § 216B.16, subd. 1 requires a 60 day notice to the Commission of a proposed rate change, after which time the proposed rate change takes effect unless suspended.

This Petition falls within the definition of a "Miscellaneous Tariff Filing" under Minn. Rule 7829.0100, subp. 11 since no determination of Minnesota Power's general revenue requirement is necessary. Minn. Rule 7829.1400, subp. 1 and 4 respectively, permit comments in response to a miscellaneous filing to be filed within 30 days, and reply comments to be filed 10 days thereafter.

**7. Utility Employee Responsible for Filing (Minn. Rule 7829.1300, subp. 4(E))**

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**8. Impact on Rates and Services (Minn. Rule 7829.1300, subp. 4(F))**

The Boswell 4 Plan Adjustment will have no effect on Minnesota Power's base rates. The impact of the Boswell 4 Plan Adjustment miscellaneous rate change on customer rates is described in section V.C., pages 18-20.

**9. Service List (Minn. Rule 7829.0700)**

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**10. Modified Rates (Minn. Rule 7825.3600)**

Minn. Rule 7825.3600 requires all proposed changes in rates be shown by filing revised or new pages to the rate book and by identifying those pages which were not changed. See Exhibit A for redlined and clean versions of the tariff page showing the proposed revised Boswell 4 Plan Adjustment factors. No other rate book pages are changing as a result of this filing. Upon approval of the requested rate adjustment, Minnesota Power will submit a compliance filing containing the final approved tariff page.

### **III. EMISSIONS-REDUCTION RIDER AUTHORIZATION**

Minn. Stat. § 216B.1692, subd. 5(b) allows the Commission to approve an emissions-reduction rider to recover the costs of a qualifying emissions-reduction project outside of a general rate case proceeding under Minn. Stat. § 216B.16. The Commission may approve a rider that:

- (1) allows the utility to recover costs of qualifying emissions-reduction projects net of revenues attributable to the project;
- (2) allows an appropriate return on investment associated with qualifying emissions-reduction projects at the level established in the public utility's last general rate case;
- (3) allocates project costs appropriately between wholesale and retail customers;
- (4) provides a mechanism for recovery above cost, if necessary to improve the overall economics of the qualifying projects to ensure implementation;
- (5) recovers costs from retail customer classes in proportion to class energy consumption; and
- (6) terminates recovery once the costs of qualifying projects have been fully recovered.

The term of the rider shall extend for the period approved by the commission regardless of any subsequent state or federal requirement affecting any pollutant addressed by the approved emissions-reduction project and regardless of the sunset date in Minn. Stat. § 216B.1692, subd. 8.

## IV. PROJECT STATUS AND REQUIRED UPDATES

### A. Project Update

Minnesota Power installed Alstom's circulating dry scrubber ("CDS") technology,<sup>8</sup> referred to as the NID system ("NID"), for the removal of PM, SO<sub>2</sub>, acid gases including hydrochloric acid and trace metals, and other hazardous air pollutants being addressed by EPA regulations, while also reducing plant wastewater. In addition to the NID system, Minnesota Power installed a PAC system to capture flue gas mercury, in combination with the fabric filter integral to the NID to control PM. The PAC system and fabric filter are key components to achieving compliance with MERA, MATS, and other enacted or pending federal and state environmental rulemakings regulating air and water emissions and solid byproducts from coal-fired power plants. Through multi-pollutant control technology, Minnesota Power cost effectively achieved the mercury reduction required by MERA while also ensuring compliance with other regulatory programs over the long term.

Construction activities are complete and the NID began operation on October 27, 2015, and was formally declared to be in service on December 22, 2015.

The NID exceeded the guaranteed emission compliance guarantees during the performance tests. Emission for SO<sub>2</sub>, mercury ("Hg"), hydrochloric acid, hydrofluoric acid, lead, filterable particulate matter and total particulate matter ranged from 53 percent to more than 93 percent below the guaranteed values. Sulfuric mist was below detectable levels or basically 100 percent below the guaranteed value of 1 part per million. Process performance was also very good. Carbon consumption for Hg control was 40 percent below the guarantee value, lime consumption was 22 percent below, water consumption was 6 percent below and differential pressure across the NID was 12 percent below the guaranteed values.

### B. Project Schedule

The BEC4 Project effectively achieved substantial completion when it was declared in service on Dec 22, 2015, ahead of the scheduled substantial completion of December 31, 2015. Actual substantial completion was delayed due to the random, unplanned failure of one of the ID

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<sup>8</sup> See <http://www.alstom.com/Global/Power/Resources/Documents/Brochures/circulating-fluidised-bed-boiler-technology-coal-oil-power.pdf> for information on NID system.

(induced draft) fan variable-frequency drive transformers. This delayed the NID performance testing. Table 1 presents the projected schedules for implementation activities and status for activities to date.

**Table 1 - Project Implementation Activity Update**

Activity – Project Implementation	Timeline
<b>Phase 1 – Conceptual Engineering</b> Target Procurement Activities – Environmental Equipment <i>*Completed</i>	Apr 2012 – Dec 2012
<b>Phase 2 – Final Design &amp; Procurement</b> Fabricate/Deliver – Fabric Filter/CDS <i>*Completed</i>	Jul 2012 – May 2015
<b>Phase 3 – Construction</b> Site Preparation <i>*Completed</i> Pile construction <i>*Completed</i> Construction – Civil & Foundations <i>*Completed</i> Construction – CDS/Fabric Filter and Ash Silo <i>*Completed</i> Construction – Electrical and Controls <i>*Completed</i>	Apr 2013 – Jul 2013 Jul 2013 – Nov 2013 Apr 2013 – Sep 2014 Apr 2014 – Jul 2015 Nov 2014 – Oct 2015
<b>Phase 4 – Start-Up</b> Checkout & Commission for Tuning <i>*Completed</i> Final Plant Start-Up and Tuning <i>*Completed</i>	Apr 2015 – Oct 2015 Oct 2015 – Jan 2016

Air and wetland/water permits from federal, state and local agencies, identified in Tables 3 and 4 on page 30 of the BEC4 Plan Petition, were required to begin construction of the BEC4 Project. Minnesota Power received all necessary permits.

**C. Cost Containment Measures and Budget Estimate Update**

The BEC4 Project was a complex multi-year project. A rigorous technology evaluation, as well as a feasibility study, was conducted over an approximate five-year period to determine the most cost-effective path forward for retrofitting BEC4. To ensure the lowest overall cost for the BEC4 Project, Minnesota Power used best practices in industry supply chain management. The Company used its purchasing procedures to obtain competitive bids for as many purchases as possible, including equipment and labor packages, and awarded contracts to bidder(s) based on the best overall economic value for its customers. The Company also included an appropriate

contingency amount to cover costs of direct project related items such as bids coming in higher than estimated, change orders for items not included in the specifications, and scope items added to the project that weren't considered during the initial concept. Minnesota Power is pleased to report that the BEC4 Project was completed well under budget at a total project cost of \$240 million, or \$110 million below the total original estimate of \$350 million. The total project cost reflects Minnesota Power's 80 percent<sup>9</sup> ownership interest in the equipment and facilities that comprise the BEC4 Project. The reasons for the decrease in total project cost for the BEC4 Project, as provided in the 2015 BEC4 Factor and Compliance Filing, are discussed below.

First, the initial Project cost estimates from April 2012 were based upon the design and footprint for a recent installation of a specific CDS technology at another utility's facility similar to BEC4. Through the request for proposal process that took place in the first half of 2012, it was determined that Alstom's NID layout fit the BEC4 site much better, with the constraints created by the location of Blackwater Lake, than the CDS technology used in the initial estimate. The NID layout offered many advantages including:

- Reducing the impact to wetlands by approximately 50 percent from the initial estimate;
- Reducing the amount of steel and erection costs due to the smaller footprint; and
- Creating additional engineering opportunities to reduce other costs.

These advantages led to Alstom being awarded the contract in August 2012.

Second, since 2012 Minnesota Power was able to refine its engineering of the project as the Company progressed from the initial design stage through the planning, procurement and initial construction stages. Over the course of the project, Minnesota Power put out for bid 43 contracts associated with the BEC4 Project. Similar to the CDS technology, as the other contracts were either awarded or were in a bid evaluation process, the Company acquired the detailed knowledge and specifications needed to refine its engineering. As the percentage of engineering completed increased, the project cost values became more certain. Many of the awarded contracts were less

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<sup>9</sup> BEC4 is jointly owned by Minnesota Power and WPPI Energy. As a co-owner of BEC4, WPPI Energy will pay a proportionate share of the required capital and O&M (operations & maintenance) associated with the BEC4 Project. Amounts reflected are net of WPPI's 20% ownership interest in BEC4. Amounts include approximately \$3.6 million of AFUDC (Allowance for Funds Used During Construction) net of contra.



than the estimated amounts. Moreover, the due diligence performed by the project team helped to minimize the incidents where the contractor hadn't included all of the necessary scope prior to awarding the bid.

Finally, the BEC4 Project cost updates the Company provided since submitting its March 7, 2013 Petition seeking Commission approval to establish the BEC4 Rider each reflected a gradual decrease in the amount of contingency on the Project. Through the diligent efforts of Minnesota Power, and those working on behalf of Minnesota Power, the Company was successful in achieving the lowest overall cost for the BEC4 Project on behalf of its customers.

#### **D. Notice of Violation Update**

Minnesota Power provides the following project update in compliance with Order Point 1.b. of the Commission's November 5, 2013 Order in Docket No. E015/M-12-920 that requires Minnesota Power to "include in its annual rate factor adjustment filing an update on its discussions with the EPA to resolve the notice of violation and shall identify and explain any costs related to the notice of violation included in its rate factor adjustment filings or other rate proceeding." On July 16, 2014, Minnesota Power reached a settlement agreement with the EPA and the MPCA related to alleged violations of the New Source Review requirements of the Clean Air Act at the Boswell Energy Center. The settlement is compatible with Minnesota Power's long term *EnergyForward* strategy to reduce emissions, diversify its energy mix and advance renewables; however, it does not include any admission of wrongdoing on the part of the company. The settlement agreement was approved by the U.S. District Court for the District of Minnesota and became effective September 29, 2014.

The BEC4 Project, as approved by the Commission in an Order dated November 5, 2013, complies with the terms of the settlement, including the permissible level of SO<sub>2</sub> emissions at the completion of the BEC4 Project. The equipment requirements to meet the SO<sub>2</sub> emission limits specified in the settlement are the same as those required to meet the SO<sub>2</sub> emission limits under MATS and other enacted or pending federal and state air regulations; therefore, there are no incremental capital costs associated with settlement compliance. The Company estimated that an increased amount of lime would be needed in order to achieve compliance with the settlement terms for SO<sub>2</sub> emissions. The original estimated cost differential of \$150,000 was based on the

pre-project baseline emission reduction level identified in the BEC4 Plan Petition for wet scrubber technology rather than the circulating dry scrubber technology of the NID system. As a result, the cost differential for the additional lime usage for the NID was increased to approximately \$246,000 annually. Additionally, the original and revised cost estimates were based on a lower dollar per ton cost for the lime than the cost for lime in 2017 and to-date. The Company is pleased to report that the NID is achieving better than expected efficiency and emission removal resulting in lower than anticipated annual lime costs for BEC4 of approximately \$637,000.<sup>10</sup> Reduction of SO<sub>2</sub> emissions to a level lower than what is required under other enacted or pending federal and state air regulations delivers further environmental value to Minnesota Power customers and other residents in northeastern Minnesota at less additional cost to customers than was originally anticipated.

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<sup>10</sup> Cost comparison is based on 2017 actuals to design lime usage to achieve 0.05lb/mmbtu emission. The 2017 actual costs are “all-in costs” including freight and tax.

## V. COST RECOVERY

### A. BEC4 Rider - Revenue Requirements

As previously mentioned, almost all of the BEC4 Project costs were rolled into base rates in the Company's 2017 rate review case. The only items included in the 2018 BEC4 revenue requirements are the 2017 ending tracker, the remaining Ash Pond project and Basin's revenue credit. Once Basin's contract ends in April 2020, the associated revenue credit will end, and this will allow the Company to roll the remaining Ash Pond project into base rates in a subsequent rate case and close out the BEC4 Rider.

The revenue requirements have been calculated according to the cost recovery terms detailed in Minnesota Power's Petition as approved by the November 5, 2013 Order.<sup>11</sup> Subsequent to the November 5, 2013 Order, the Commission approved Minnesota Power's 2013 Renewable Resources Rider Adjustment Factors in Docket No. E015/M-13-410. In its Order dated December 3, 2013, the Commission, "Directed the Company for all future Renewable Resources Rider and other rider recovery filings, to remove capitalized internal costs when calculating the amount of AFUDC (allowance for funds used during construction) included in the rate base for rider recovery purposes, consistent with the terms of its prior rider filings." Consistent with this directive, Minnesota Power has excluded internal capitalized labor and the AFUDC on internal capitalized labor from the project costs and overall revenue requirements calculations for the BEC4 Project. Refer to Exhibit B-3 for these specific deductions from the project costs.

As part of a power sales agreement to Basin, Minnesota Power is allowed to collect costs associated with new emission control additions to BEC4 over a specified period from Basin. Minnesota Power is passing the benefits of this agreement directly to customers through crediting the revenue requirements by Basin's specified share of the costs for a portion of the contract. Refer to Exhibit B-1, page 8, row D2 for Basin's 2018 share.

Assuming final rates in the Company's current rate review will be implemented on December 1, 2018, the rider revenue requirements utilize the rate of return from the Commission's

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<sup>11</sup> A description of the revenue requirement components is provided on pages 19 – 23 of Minnesota Power's March 7, 2013 Petition seeking Commission approval to establish the BEC4 Rider (see Docket No. E015/M-12-920).

March 12, 2018, rate review Findings of Fact, Conclusions, and Order starting December 1, 2018. Refer to Exhibit B-4.

The 2018 revenue requirements do not reflect any changes due to the 2017 Federal Tax Act. Once the details of implementing the needed changes for the Company are resolved in the related docket (Docket No. E, G-999/CI-17-895), the Company will update the BEC4 tracker and incorporate the impacts in the subsequent factor filing. In addition, as the 2018 revenue requirements do not include any plant in service projects with deferred income taxes being computed on a future test year, no pro-rata deferred tax calculation is necessary.

Although the Company currently requests to zero out the rider sub-factor, Minnesota Power will continue to bill customers using the base rate sub-factor and credit that revenue to base rate revenue until implementation of final rates in the rate review case. With the implementation of final rates, the base rate sub-factor will be zeroed out. In its general rate case, the Company included an estimated budget of \$94.9 million in base rate rider cash collections in the 2017 test year for three current cost recovery riders: BEC4 Environmental Rider, Renewable Resources Rider, and Transmission Cost Recovery Rider. As shown in Exhibit A-2, page 2, the actual cash collection for all three riders for 2017 was \$90.9 million. As summarized in the rate review Staff Briefing Papers, Volume 1, page 259, the under or over collection in actual base rate cash collection will be addressed in each rider after final rates are implemented and the final base rate cash collections are known (Docket No. E015/GR-16-664).

Minnesota Power proposes to include -\$6.5 million in jurisdictional revenue requirements in the BEC4 Rider Adjustment Factors. The total revenue requirements for the BEC4 Rider Adjustment Factors consist of the 2017 year-end Tracker Balance of -\$1.6 million and 2018 revenue requirements of -\$4.9 million. As discussed below, the BEC4 Rider Adjustment Factors are calculated to recover the revenue requirements over a twelve-month period. Refer to Exhibit B-1 for a summary of the revenue requirements, cost allocation and rate design, and to Exhibit B-2 for the detailed revenue requirement calculations.

## **B. Cost Allocation and Rate Design**

### **1. Jurisdictional and Class Allocation**

The jurisdictional and class allocations of revenue requirements for the BEC4 Project have been calculated based on the methodology detailed in Minnesota Power's Petition and the subsequent Order. Specifically, until December 1, 2018, the revenue requirements have been allocated between jurisdictions using the Power Supply Production Demand (D-01) allocators as approved in Minnesota Power's 2009 rate case (Docket No. E015/GR-09-1151). Once revenue requirements are brought to jurisdiction, Minnesota Power utilized the Power Supply Production Demand (Peak & Average D-01) allocators, also approved in Minnesota Power's 2009 rate case (Docket No. E015/GR-09-1151), to allocate the revenue requirements to class.

Order Point 4 of the November 5, 2013 Order requires Minnesota Power to make annual rate factor adjustment filings, including adjusted retail allocation factors if any Large Power or wholesale customer's load changes by 10 megawatts or more. Consistent with the Commission's orders approving the 2015 and 2016 Boswell 4 Plan Adjustment Factors, the Company has continued to use revised jurisdictional allocation factors to reflect the loss of a wholesale customer, Dahlberg Light & Power, effective January 1, 2014.

Because almost all of the BEC4 Project costs were rolled into base rates in the Company's 2017 rate review case, the Company is proposing to use the approved allocation factors from the rate case rather than using the old 2009 allocation factors further revised to reflect changes in load since the Commission's December 21, 2016 approval of the 2016 Boswell 4 Plan Adjustment Factors. Assuming final rates in the Company's current rate review will be implemented on December 1, 2018, the monthly rider revenue requirements are calculated utilizing the updated jurisdictional allocation factors from the Company's current rate review starting December 1, 2018. The overall revenue requirements are also allocated to class utilizing the updated class allocation factors. See Exhibit B-5 for further detail on these allocators.

## **2. Rate Design**

Consistent with the terms of the BEC4 Rider, the Large Power (“LP”) rate design for the Boswell 4 Plan Adjustment incorporates demand (\$/kW-month) and energy (¢/kWh) adders that recover the costs in a manner that preserves LP base rate design. Specifically, the LP revenue requirements are split between demand and energy based on LP’s 2017 base rate demand and energy revenue split of approximately 56 percent demand and 44 percent energy as currently drafted for the Company’s Compliance Filing in its current rate case (Docket No. E015/GR-16-664). The LP demand rate adder is calculated as 56 percent of the projected LP revenue requirement divided by the LP class Billing Demand (kW-month) from the 2018 budget. The LP energy rate adder is calculated as 44 percent of the projected LP revenue requirement divided by the annual LP energy sales (kWh) from the 2018 budget. See Exhibit B-1, page 1 of 8, for further detail.

Also consistent with the terms of the BEC4 Rider, the rate design for the Boswell 4 Plan Adjustment for the remaining retail rate classes (non-LP) is an average energy-based (kWh) rate adder. This energy adder is calculated as an average energy (¢/kWh) charge consisting of the projected non-LP revenue requirements divided by the annual non-LP energy (kWh) sales from the 2018 budget. See Exhibit B-1, page 1 of 8, for further detail. Also, refer to Exhibit A-1 for the proposed Rider for Boswell Unit 4 Emission Reduction tariff page.

### **C. Customer Impact**

Table 2 summarizes the estimate rate impacts by customer class assuming the current rider sub-factors are zeroed out on June 1, 2018 and then the new 2018 Boswell 4 Plan Adjustment Factors are implemented coincident with final rates in the Company’s rate review on December 1, 2018.

Assuming the rider sub-factors are zeroed out on June 1, 2018, the rate impact for the average residential customer will be a decrease of approximately \$0.26 per month or a 0.33 percent decrease. Assuming the new 2018 Boswell 4 Plan Adjustment Factors are implemented coincident with final rates in the Company’s rate review, the rate impact for the average residential customer will be a decrease of approximately \$1.06 per month or a 1.35 percent decrease compared to current rates.

Similarly for Large Power customers, assuming the rider sub-factors are zeroed out on June 1, 2018, the rate impact will be approximately a 0.45 percent decrease. Assuming the new 2018 Boswell 4 Plan Adjustment Factors are implemented coincident with final rates in the Company's rate review, the rate impact for Large Power customer will be approximately a 1.26 percent decrease compared to current rates.

**Table 2--Estimated Customer Impact**

<b>Proposed Change Effective</b>	<b>6/1/2018</b>	<b>12/1/2018</b>
	Zero Out	2018 BEC4
	Sub-Factor	Factor
<b>Rate Class Impacts 1/</b>		
<b>Residential</b>		
Average Current Rate (¢/kWh)	10.697	10.697
Decrease (¢/kWh)	-0.035	-0.144
Decrease (%)	-0.33	-1.35
Average Impact (\$/month)	-0.26	-1.06
<b>General Service</b>		
Average Current Rate (¢/kWh)	10.609	10.609
Decrease (¢/kWh)	-0.035	-0.144
Decrease (%)	-0.33	-1.36
Average Impact (\$/month)	-0.95	-3.90
<b>Large Light &amp; Power</b>		
Average Current Rate (¢/kWh)	8.117	8.117
Decrease (¢/kWh)	-0.035	-0.144
Decrease (%)	-0.43	-1.77
Average Impact (\$/month)	-90.90	-373.99
<b>Large Power</b>		
Average Current Rate (¢/kWh)	6.759	6.759
Decrease (demand + energy combined) (¢/kWh)	-0.030	-0.085
Decrease (%)	-0.45	-1.26
Average Impact (\$/month)	-19,044	-53,409
<b>Municipal Pumping</b>		
Average Current Rate (¢/kWh)	10.290	10.290
Decrease (¢/kWh)	-0.035	-0.144
Decrease (%)	-.34	-1.40
Average Impact (\$/month)	-1.84	-7.59
<b>Lighting</b>		
Average Current Rate (¢/kWh)	16.226	16.226
Decrease (¢/kWh)	-0.035	-0.144
Decrease (%)	-0.22	-0.89
Average Impact (\$/month)	-0.13	-0.51

**Notes:**

1/ Average current rates are 2017 rates based on 2017 TY Present Rates in 2017 Rate Case (E015/GR-16-664) including rider rates. Rates do not include interim or final rate increase. Current rider rates include Renewable Resources Rider rates, Transmission Cost Recovery Rider rates, BEC4 Rider rates, Conservation Program Adjustment, and estimated 2017 Fuel and Purchased Energy Adjustment. Average \$/month impact based on 2018 budgeted billing units.



## VI. CONCLUSION

Minnesota Power respectfully requests that the Commission approve Minnesota Power's rate adjustment under its Rider for Boswell Unit 4 Emission Reduction. The Company further requests that the Commission waive the 90 day requirement under Minn. Rule 7825.3200 and grant provisional approval to zero out the rider sub-factors beginning June 1, 2018, with the understanding that a final decision will be made subsequent to a comment period in which parties may conduct a thorough review of the petition.

Dated: April 9, 2018

Respectfully submitted,



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**MINNESOTA POWER**  
**ELECTRIC RATE BOOK - VOLUME I**

SECTION  V  PAGE NO.  93.0   
 REVISION  42

**RIDER FOR BOSWELL UNIT 4 EMISSION REDUCTION**

Applicable to electric service under all Company's Retail Rate Schedules except Competitive Rate Schedules - Rate Codes 73 and 79. In addition, this Rider is applicable to service under Company's Rider for Large Power Interruptible Service and Rider for Large Power Incremental Production Service.

The following charges are applicable in addition to all charges for service being taken under Company's standard rate schedules:

<b>Rate Class</b>	<b>Boswell 4 Plan Adjustment</b>
-------------------	----------------------------------

Large Power	<del>-\$0.224.00</del> per kW-month of Billing Demand
-------------	--

and

	<del>-0.0240.095</del> ¢/kWh
--	------------------------------

All other applicable Retail Rate Customers	<del>-0.1090.265</del> ¢/kWh
--	------------------------------

Filing Date <u> November 26, 2014 </u>	MPUC Docket No. <u> E015/M-14-990 </u>
Effective Date <u> September 1, 2015 </u>	Order Date <u> August 24, 2015 </u>

Approved by:  Marcia A. Podratz   
**Marcia A. Podratz**  
 Director - Rates

**MINNESOTA POWER  
ELECTRIC RATE BOOK - VOLUME I**

**SECTION**   V   **PAGE NO.**  93.0   
**REVISION**                   2                  

**RIDER FOR BOSWELL UNIT 4 EMISSION REDUCTION**

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The following charges are applicable in addition to all charges for service being taken under Company's standard rate schedules:

<b>Rate Class</b>	<b>Boswell 4 Plan Adjustment</b>
Large Power	-\$0.22 per kW-month of Billing Demand  and  -0.024¢/kWh
All other applicable Retail Rate Customers	-0.109¢/kWh

**Filing Date** \_\_\_\_\_ **MPUC Docket No.** \_\_\_\_\_  
**Effective Date** \_\_\_\_\_ **Order Date** \_\_\_\_\_

**Approved by:**   Marcia A. Podratz    
**Marcia A. Podratz**  
**Director - Rates**

REPRODUCED FROM:  
MP Exhibit \_\_\_(HGM)  
Docket No. E015/GR-16-664  
Schedule 6  
Page 1 of 2

Minnesota Power  
BEC4 Rider  
Development of Sub-Factors

		MN Jurisdictional		
		Amounts	BEC4 Sub-Factors	
		Total /1	Base Rates	Rider
Projected Year End 2014 Tracker Balance /2		\$ 5,790,370		\$ 5,790,370
2015 Net Revenue Requirements /3		\$ 17,120,777	\$ 19,950,669	\$ (2,829,892)
Total 2015 Factor Revenue Requirements		\$ 22,911,148	\$ 19,950,669	\$ 2,960,478
	<b>Allocators</b>			
MN Jurisdictional & Class Revenue Requirements	100.00%	\$ 22,911,148	\$ 19,950,669	\$ 2,960,478
Large Power	62.51%	\$ 14,321,709	\$ 12,471,120	\$ 1,850,589
All Other Retail Classes	37.49%	\$ 8,589,439	\$ 7,479,549	\$ 1,109,890
<b>Billing Units /4</b>				
Large Power	kW - month	716,608	716,608	716,608
	kWh	6,037,136,000	6,037,136,000	6,037,136,000
All Other Retail Classes	kWh	3,245,508,000	3,245,508,000	3,245,508,000
<b>Billing Factors /5</b>				
		<b>Effective</b>	<b>BEC4 Sub-Factors</b>	
		<b>9/1/2015</b>	<b>Base Rates</b>	<b>Rider</b>
Large Power	\$/kW - month	1.00	0.87	0.13
	¢/kWh	0.095	0.083	0.012
All Other Retail Classes	¢/kWh	0.265	0.230	0.035

Notes:

1/ 2015 Boswell Unit 4 Factor Filing, 3-16-2015 Reply Comments, Exhibit B-1, page 1. Docket E015/M-14-990.

2/ Tracker balance to continue in rider

3/ Ash Management project and Basin revenue credit are staying in rider. See MP Exhibit\_\_\_(HGM), Schedule 6, page 2 of 2 for details.

4/ 2015 budget.

5/ The LP rate design is a demand rate adder (\$/kW-month) and an energy adder (¢/kWh). The LP allocated costs are to be split between demand and energy on the 2010 base rate demand and energy revenue split of approximately 60% demand and 40% energy per results of MP's most recent MPUC rate case (Docket No. E015/GR-09-1151).

All other retail classes will have an energy adder (¢/kWh).

Minnesota Power  
BEC4 Rider  
Base Rate Rider Cash Collections

	2017 Test Year Budget		2017 Actual	Over / (Under) Collection
BEC4 Environmental Rider	18,951,906	1/	18,060,619	(891,287)
Renewable Resources Rider	63,805,127	2/	61,205,036	(2,600,091)
Transmission Rider	12,174,515	3/	11,600,892	(573,624)
<b>Total</b>	<u>94,931,548</u>		<u>90,866,546</u>	<u>(4,065,002)</u>

1/ MP Exhibit 019 (MAP) Supplemental Direct, Schedule E-2, page 83 of 104 (Docket E015/GR-16-664).

2/ MP Exhibit 019 (MAP) Supplemental Direct, Schedule E-2, page 71 of 104 (Docket E015/GR-16-664).

3/ MP Exhibit 019 (MAP) Supplemental Direct, Schedule E-2, page 77 of 104 (Docket E015/GR-16-664).

Minnesota Power  
BEC4 Rider: 2018 Factor Filing  
Summary: Revenue Requirements, Cost Allocation and Rate Design

		MN Jurisdictional Amounts	
		Total	
<u>2017 Ending Tracker Balance (Over) / Under Collection 1/</u>			
MN Jurisdictional & Class Tracker		\$	(1,590,932)
Large Power		\$	21,147
All Other Retail Classes		\$	(1,612,079)
<u>2018 Net Revenue Requirements 2/</u>	<u>Allocators 3/</u>		
MN Jurisdictional & Class Revenue Requirements	100.00%	\$	(4,892,054)
Large Power	61.68%	\$	(3,017,231)
All Other Retail Classes	38.32%	\$	(1,874,824)
<u>Total 2018 BEC4 Factor Revenue Requirements</u>			
MN Jurisdictional & Class Revenue Requirements		\$	(6,482,986)
Large Power		\$	(2,996,083)
All Other Retail Classes		\$	(3,486,903)
<u>Billing Units 4/</u>			
Large Power	kW - month		647,437
	kWh		5,465,342,000
All Other Retail Classes	kWh		3,189,902,000
		<b>Proposed</b>	
		<b>12/1/2018</b>	
<hr/>			
<u>Billing Factors 5/</u>			
Large Power	\$/kW - month		(0.22)
	¢/kWh		(0.024)
All Other Retail Classes	¢/kWh		(0.109)
		Current Rider	
		Sub-Factor 6/	
			Proposed
			Decrease
			<hr/>
Large Power	(\$/kW - month)	0.13	(0.22)
	(¢/kWh)	0.012	(0.024)
All Other Classes	(¢/kWh)	0.035	(0.109)
			(0.144)

Notes:

1/ Refer to Exhibit B-1, page 2 of 8.

2/ Refer to Exhibit B-1, page 8 of 8, row D5.

3/ Refer to Exhibit B-5, page 4.

4/ 2018 Budget.

5/ The LP rate design is a demand rate adder (\$/kW-month) and an energy adder (¢/kWh). The LP allocated costs are to be split between demand and energy on the 2017 base rate demand and energy revenue split of approximately 56% demand and 44% energy per results of MP's 2017 MPUC rate case (Docket No. E015/GR-16-664). All other retail classes will have an energy adder (¢/kWh).

6/ Refer to Exhibit A-2, page 1 of 2.

Minnesota Power  
BEC4 Rider: 2018 Factor Filing  
Tracker Summary

<u>2014 Ending Tracker (Over)/Under Collection 1/</u>		
MN Jurisdictional & Class Tracker		\$ 5,680,981
Large Power		\$ 3,317,221
All Other Retail Classes		\$ 2,363,760
<u>2015 Net Revenue Requirements 2/</u>	<u>Allocators 3/</u>	
MN Jurisdictional & Class Revenue Requirements	100.00%	\$ 14,982,282
Large Power	62.51%	\$ 9,365,456
All Other Retail Classes	37.49%	\$ 5,616,826
<u>2015 Cash Collections</u>		
Total		\$ (15,232,730)
Large Power		\$ (9,352,183)
All Other Retail Classes		\$ (5,880,547)
<u>2016 Net Revenue Requirements 4/</u>	<u>Allocators 3/</u>	
MN Jurisdictional & Class Revenue Requirements	100.00%	21,106,241
Large Power	62.51%	\$ 13,193,556
All Other Retail Classes	37.49%	\$ 7,912,685
<u>2016 Cash Collections</u>		
Total		\$ (19,675,035)
Large Power		\$ (11,513,728)
All Other Retail Classes		\$ (8,161,307)
<u>2017 Continuing Rider Net Revenue Requirements 5/</u>	<u>Allocators 3/</u>	
MN Jurisdictional & Class Revenue Requirements	100.00%	(5,268,845)
Large Power	62.51%	\$ (3,293,566)
All Other Retail Classes	37.49%	\$ (1,975,279)
<u>2017 Continuing Rider Cash Collections</u>		
Total		\$ (3,183,826)
Large Power		\$ (1,695,608)
All Other Retail Classes		\$ (1,488,218)
<u>2017 Continuing Rider Ending Tracker (Over)/Under Collection</u>		
MN Jurisdictional Tracker		\$ (1,590,932)
Large Power		\$ 21,147
All Other Retail Classes		\$ (1,612,079)

1/ BEC4 2016 Factor Filing, Docket E015/M-15-876, Exhibit B-1, page 2, 2013 plus 2014 under collection.

2/ Refer to Exhibit B-1, page 4, line E8.

3/ Refer to Exhibit B-5, page 1.

4/ Refer to Exhibit B-1, page 6, line E8.

5/ Refer to Exhibit B-1, page 7, line D5.

Minnesota Power  
BEC4 Rider  
2015 Revenue Requirements: Total Sum All Projects

**2015 Revenue Requirements**

**Total Sum: All Projects**

Section	Line	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Total Year Dec-15
<b>A</b>	<b>Book Basis of Property</b>													
	0 CWIP (net of contra AFDC & internal costs)	144,944,406	149,505,044	157,912,668	165,117,529	172,095,114	178,943,683	185,806,724	192,158,769	201,158,418	205,502,288	209,192,849	2,301,781	2,301,781
	1 Plant in Service (net of contra AFDC & Intern	-	-	-	-	-	-	-	-	-	-	-	210,919,585	210,919,585
	2 Total Accumulated Depreciation	-	-	-	-	-	-	-	-	-	-	-	439,416	439,416
	3 Net Plant	-	-	-	-	-	-	-	-	-	-	-	210,480,169	210,480,169
	4 Total Depreciation	-	-	-	-	-	-	-	-	-	-	-	439,416	439,416
<b>B</b>	<b>Tax Basis of Property</b>													
	1 Plant in Service	-	-	-	-	-	-	-	-	-	-	-	210,919,585	210,919,585
	2 Accumulated Depreciation	-	-	-	-	-	-	-	-	-	-	-	106,608,762	106,608,762
	3 Net Plant	-	-	-	-	-	-	-	-	-	-	-	104,310,823	104,310,823
	4 Bonus Depreciation	-	-	-	-	-	-	-	-	-	-	-	105,459,792	105,459,792
	5 Total Tax Depreciation (including bonus)	-	-	-	-	-	-	-	-	-	-	-	106,608,762	106,608,762
	6 Tax Book Difference	-	-	-	-	-	-	-	-	-	-	-	106,169,346	106,169,346
	7 Income Tax Rate	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%
	8 Accumulated Deferred Income Tax Liability	-	-	-	-	-	-	-	-	-	-	-	43,922,258	43,922,258
	9 Deferred Tax Expense debit / (Credit)	-	-	-	-	-	-	-	-	-	-	-	43,922,258	43,922,258
<b>C-1</b>	<b>Revenue Requirements - Consolidated NOL</b>													
	1 Net Plant	-	-	-	-	-	-	-	-	-	-	-	210,480,169	210,480,169
	2 Less: ADITL - Def Taxes	-	-	-	-	-	-	-	-	-	-	-	(43,922,258)	(43,922,258)
	3 Plus: ADITA - NOL	-	-	-	-	-	-	-	-	-	-	-	-	-
	4 Rate Base	-	-	-	-	-	-	-	-	-	-	-	166,557,911	166,557,911
	5 Average Rate Base	-	-	-	-	-	-	-	-	-	-	-	83,278,955	83,278,955
	6 Current Return on CWIP	1,446,781	1,490,650	1,556,302	1,635,340	1,707,139	1,777,134	1,846,549	1,913,450	1,991,168	2,058,720	2,099,394	1,070,692	20,593,320
	7 Return on Average Rate Base	-	-	-	-	-	-	-	-	-	-	-	-	-
	8 After Tax Return on Equity	-	-	-	-	-	-	-	-	-	-	-	391,018	391,018
	9 Income Tax Component	-	-	-	-	-	-	-	-	-	-	-	275,907	275,907
	10 Interest Expense Component	-	-	-	-	-	-	-	-	-	-	-	176,274	176,274
	11 Total Return on Average Rate Base	-	-	-	-	-	-	-	-	-	-	-	843,199	843,199
	12 Operation & Maintenance Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
	13 Depreciation Expense	-	-	-	-	-	-	-	-	-	-	-	439,416	439,416
	14 Property Tax	-	-	-	-	-	-	-	-	-	-	-	-	-
	15 Revenue Requirements	1,446,781	1,490,650	1,556,302	1,635,340	1,707,139	1,777,134	1,846,549	1,913,450	1,991,168	2,058,720	2,099,394	2,353,307	21,875,935



Minnesota Power  
BEC4 Rider  
2015 Revenue Requirements: Total Sum All Projects

**2015 Revenue Requirements**

**Total Sum: All Projects**

Section	Line	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Total Year Dec-15
<b>C-2</b>	<b>Revenue Requirements - Stand Alone NOL</b>													
	1 Net Plant	-	-	-	-	-	-	-	-	-	-	-	210,480,169	210,480,169
	2 Less: ADITL - Def Taxes	-	-	-	-	-	-	-	-	-	-	-	(43,922,258)	(43,922,258)
	3 Plus: ADITA - NOL (Stand Alone)	-	-	-	-	-	-	-	-	-	-	-	36,874,276	36,874,276
	4 Rate Base	-	-	-	-	-	-	-	-	-	-	-	203,432,187	203,432,187
	5 Average Rate Base	-	-	-	-	-	-	-	-	-	-	-	101,716,093	101,716,093
	6 Current Return on CWIP	1,446,781	1,490,650	1,556,302	1,635,340	1,707,139	1,777,134	1,846,549	1,913,450	1,991,168	2,058,720	2,099,394	1,070,692	20,593,320
	7 Return on Average Rate Base	-	-	-	-	-	-	-	-	-	-	-	-	-
	8 After Tax Return on Equity	-	-	-	-	-	-	-	-	-	-	-	477,586	477,586
	9 Income Tax Component	-	-	-	-	-	-	-	-	-	-	-	336,991	336,991
	10 Interest Expense Component	-	-	-	-	-	-	-	-	-	-	-	215,299	215,299
	11 Total Return on Average Rate Base	-	-	-	-	-	-	-	-	-	-	-	1,029,875	1,029,875
	12 Operation & Maintenance Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
	13 Depreciation Expense	-	-	-	-	-	-	-	-	-	-	-	439,416	439,416
	14 Property Tax	-	-	-	-	-	-	-	-	-	-	-	-	-
	15 Revenue Requirements	1,446,781	1,490,650	1,556,302	1,635,340	1,707,139	1,777,134	1,846,549	1,913,450	1,991,168	2,058,720	2,099,394	2,539,983	22,062,611
<b>D</b>	<b>Stand Alone Taxable Income or Loss (NOL)</b>													
	1 Revenue Requirements	1,446,781	1,490,650	1,556,302	1,635,340	1,707,139	1,777,134	1,846,549	1,913,450	1,991,168	2,058,720	2,099,394	2,539,983	22,062,611
	2 Tax Depreciation	-	-	-	-	-	-	-	-	-	-	-	106,608,762	106,608,762
	3 Property Tax	-	-	-	-	-	-	-	-	-	-	-	-	-
	4 Interest Expense (including on CWIP)	302,455	311,626	325,350	341,874	356,883	371,516	386,028	400,013	416,261	430,383	438,886	439,131	4,520,405
	5 Operation & Maintenance Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
	6 Total Tax Deduction	302,455	311,626	325,350	341,874	356,883	371,516	386,028	400,013	416,261	430,383	438,886	107,047,893	111,129,166
	7 Taxable Income (NOL)	1,144,326	1,179,025	1,230,952	1,293,467	1,350,256	1,405,618	1,460,521	1,513,437	1,574,908	1,628,337	1,660,508	(104,507,910)	(89,066,555)
	8 Current tax expense	473,408	487,762	509,245	535,107	558,600	581,504	604,217	626,109	651,539	673,643	686,952	(43,234,923)	(36,846,837)
	9 Taxable Income (NOL)	1,144,326	1,179,025	1,230,952	1,293,467	1,350,256	1,405,618	1,460,521	1,513,437	1,574,908	1,628,337	1,660,508	(104,507,910)	(89,066,555)
	10 NOL carryforward	-	-	-	-	-	-	-	-	-	-	-	-	-
	11 Taxable Income after NOL carryforward	1,144,326	1,179,025	1,230,952	1,293,467	1,350,256	1,405,618	1,460,521	1,513,437	1,574,908	1,628,337	1,660,508	(89,115,894)	(89,066,555)
	12 Expected stand alone ADITA NOL	-	-	-	-	-	-	-	-	-	-	-	36,874,276	36,874,276
<b>E</b>	<b>Summary: Revenue Requirements</b>													
	1 Revenue Requirement: Consolidated	1,446,781	1,490,650	1,556,302	1,635,340	1,707,139	1,777,134	1,846,549	1,913,450	1,991,168	2,058,720	2,099,394	2,353,307	21,875,935
	2 Revenue Requirement: Stand Alone	1,446,781	1,490,650	1,556,302	1,635,340	1,707,139	1,777,134	1,846,549	1,913,450	1,991,168	2,058,720	2,099,394	2,539,983	22,062,611
	3 Revenue Requirement: Rider 1/	1,446,781	1,490,650	1,556,302	1,635,340	1,707,139	1,777,134	1,846,549	1,913,450	1,991,168	2,058,720	2,099,394	2,353,307	21,875,935
	4 Revenue Credit for Basin's Share	-	-	-	-	(340,604)	(354,848)	(368,969)	(382,773)	(398,797)	(413,127)	(422,118)	(470,655)	(3,151,890)
	5 BEC 4 Base Rate Revenue Credit	-	-	-	-	-	-	-	(75,828)	(151,655)	(151,655)	(151,655)	(151,655)	(682,450)
	6 Total Net Revenue Requirements	1,446,781	1,490,650	1,556,302	1,635,340	1,366,535	1,422,286	1,477,580	1,454,850	1,440,715	1,493,938	1,525,621	1,730,997	18,041,596
	7 MN Jurisdictional Allocator 2/	0.8304	0.8304	0.8304	0.8304	0.8304	0.8304	0.8304	0.8304	0.8304	0.8304	0.8304	0.8304	0.8304
	8 MN Jurisdictional Revenue Requirement	1,201,450	1,237,881	1,292,400	1,358,036	1,134,812	1,181,109	1,227,027	1,208,151	1,196,413	1,240,611	1,266,921	1,437,472	14,982,282

1/ Lesser of E1 or E2.  
2/ Refer to Exhibit B-5, page 1.

Minnesota Power  
BEC4 Rider  
2016 Revenue Requirements: Total Sum All Projects

**2016 Revenue Requirements**

**Total Sum: All Project**

Section	Line	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Total Year Dec-16
<b>A</b>	<b>Book Basis of Property</b>													
	0 CWIP (net of contra AFDC & internal costs)	2,295,854	2,443,719	2,786,455	3,462,860	4,280,856	4,927,104	5,192,482	3,967,849	4,320,343	4,639,158	1,439,658	1,703,907	1,703,907
	1 Plant in Service (net of contra AFDC & Intern	211,488,706	211,965,111	212,330,033	212,164,859	212,626,202	212,827,601	212,964,025	215,296,324	216,492,846	216,693,335	220,023,332	220,210,016	220,210,016
	2 Total Accumulated Depreciation	1,319,433	2,201,629	3,085,577	3,969,941	4,854,922	5,741,285	6,628,350	7,520,560	8,420,120	9,322,591	10,232,831	11,150,812	11,150,812
	3 Net Plant	210,169,273	209,763,482	209,244,456	208,194,918	207,771,280	207,086,316	206,335,674	207,775,765	208,072,726	207,370,744	209,790,501	209,059,205	209,059,205
	4 Total Depreciation	880,017	882,195	883,948	884,364	884,981	886,362	887,066	892,209	899,561	902,471	910,240	917,980	10,711,396
<b>B</b>	<b>Tax Basis of Property</b>													
	1 Plant in Service	211,488,706	211,965,111	212,330,033	212,164,859	212,626,202	212,827,601	212,964,025	215,296,324	216,492,846	216,693,335	220,023,332	220,210,016	220,210,016
	2 Accumulated Depreciation	107,910,184	109,167,274	110,370,199	111,307,349	112,559,838	113,683,289	114,774,911	116,974,800	118,613,317	119,755,035	122,499,286	123,674,005	123,674,005
	3 Net Plant	103,578,522	102,797,837	101,959,834	100,857,510	100,066,364	99,144,311	98,189,113	98,321,524	97,879,529	96,938,301	97,524,047	96,536,012	96,536,012
	4 Bonus Depreciation	284,560	238,203	182,461	(82,587)	230,672	100,699	68,212	1,166,150	598,261	100,245	1,664,999	93,342	4,645,216
	5 Total Tax Depreciation (including bonus)	1,301,422	1,257,090	1,202,925	937,150	1,252,489	1,123,451	1,091,622	2,199,889	1,638,517	1,141,718	2,744,251	1,174,719	17,065,243
	6 Tax Book Difference	106,590,750	106,965,645	107,284,622	107,337,408	107,704,915	107,942,005	108,146,561	109,454,241	110,193,197	110,432,443	112,266,454	112,523,193	112,523,193
	7 Income Tax Rate	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%
	8 Accumulated Deferred Income Tax Liability	44,096,593	44,251,687	44,383,648	44,405,486	44,557,524	44,655,607	44,740,232	45,281,219	45,586,925	45,685,902	46,444,632	46,550,845	46,550,845
	9 Deferred Tax Expense debit / (Credit)	174,335	155,094	131,961	21,838	152,038	98,084	84,625	540,987	305,706	98,976	758,730	106,213	2,628,586
<b>C-1</b>	<b>Revenue Requirements - Consolidated NOL</b>													
	1 Net Plant	210,169,273	209,763,482	209,244,456	208,194,918	207,771,280	207,086,316	206,335,674	207,775,765	208,072,726	207,370,744	209,790,501	209,059,205	209,059,205
	2 Less: ADITL - Def Taxes	(44,096,593)	(44,251,687)	(44,383,648)	(44,405,486)	(44,557,524)	(44,655,607)	(44,740,232)	(45,281,219)	(45,586,925)	(45,685,902)	(46,444,632)	(46,550,845)	(46,550,845)
	3 Rate Base	166,072,679	165,511,795	164,860,808	163,789,432	163,213,756	162,430,709	161,595,442	162,494,546	162,485,801	161,684,842	163,345,869	162,508,360	162,508,360
	4 Average Rate Base	166,315,295	165,792,237	165,186,301	164,325,120	163,501,594	162,822,233	162,013,075	162,044,994	162,490,173	162,085,321	162,515,356	162,927,114	163,501,568
	5 Current Return on CWIP	23,276	23,994	26,478	31,637	39,203	46,615	51,230	46,374	41,959	45,357	30,774	15,914	422,812
	6 Return on Average Rate Base	-	-	-	-	-	-	-	-	-	-	-	-	-
	7 After Tax Return on Equity	780,897	778,442	775,596	771,553	767,686	764,497	760,697	760,847	762,937	761,037	763,056	764,989	9,212,234
	8 Income Tax Component	551,011	549,278	547,270	544,417	541,689	539,438	536,757	536,863	538,338	536,997	538,421	539,786	6,500,266
	9 Interest Expense Component	352,034	350,927	349,644	347,822	346,078	344,640	342,928	342,995	343,938	343,081	343,991	344,862	4,152,940
	10 Total Return on Average Rate Base	1,683,942	1,678,646	1,672,511	1,663,792	1,655,454	1,648,575	1,640,382	1,640,706	1,645,213	1,641,114	1,645,468	1,649,637	19,865,440
	11 Operation & Maintenance Expense	384,623	160,938	211,084	119,730	305,724	241,677	381,048	296,387	239,297	245,925	251,269	131,331	2,969,034
	12 Depreciation Expense	880,017	882,195	883,948	884,364	884,981	886,362	887,066	892,209	899,561	902,471	910,240	917,980	10,711,396
	13 Property Tax	-	-	-	-	-	-	-	-	-	-	-	-	-
	14 Revenue Requirements	2,971,858	2,745,774	2,794,021	2,699,524	2,885,362	2,823,230	2,959,727	2,875,675	2,826,030	2,834,867	2,837,751	2,714,863	33,968,682

Minnesota Power  
BEC4 Rider  
2016 Revenue Requirements: Total Sum All Projects

**2016 Revenue Requirements**

**Total Sum: All Project**

Section	Line	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Total Year Dec-16
<b>C-2</b>	<b>Revenue Requirements - Stand Alone NOL</b>													
	1 Net Plant	210,169,273	209,763,482	209,244,456	208,194,918	207,771,280	207,086,316	206,335,674	207,775,765	208,072,726	207,370,744	209,790,501	209,059,205	209,059,205
	2 Less: ADITL - Def Taxes	(44,096,593)	(44,251,687)	(44,383,648)	(44,405,486)	(44,557,524)	(44,655,607)	(44,740,232)	(45,281,219)	(45,586,925)	(45,685,902)	(46,444,632)	(46,550,845)	(46,550,845)
	3 Plus: ADITA - NOL (Stand Alone)	36,376,259	35,862,410	35,329,171	34,690,602	34,186,854	33,633,154	33,070,526	32,917,819	32,576,695	32,031,649	32,087,554	31,548,567	31,548,567
	4 Rate Base	202,448,938	201,374,205	200,189,979	198,480,034	197,400,610	196,063,863	194,665,968	195,412,365	195,062,496	193,716,491	195,433,423	194,056,927	194,056,927
	5 Average Rate Base	202,940,562	201,911,572	200,782,092	199,335,007	197,940,322	196,732,237	195,364,915	195,039,166	195,237,430	194,389,493	194,574,957	194,745,175	197,416,077
	6 Current Return on CWIP	23,276	23,994	26,478	31,637	39,203	46,615	51,230	46,374	41,959	45,357	30,774	15,914	422,812
	7 Return on Average Rate Base	-	-	-	-	-	-	-	-	-	-	-	-	-
	8 After Tax Return on Equity	952,863	948,032	942,729	935,934	929,386	923,714	917,294	915,764	916,695	912,714	913,585	914,384	11,123,093
	9 Income Tax Component	672,352	668,943	665,201	660,407	655,786	651,784	647,254	646,175	646,831	644,022	644,637	645,201	7,848,592
	10 Interest Expense Component	429,558	427,379	424,989	421,926	418,974	416,417	413,522	412,833	413,253	411,458	411,850	412,211	5,014,368
	11 Total Return on Average Rate Base	2,054,773	2,044,355	2,032,919	2,018,267	2,004,146	1,991,914	1,978,070	1,974,772	1,976,779	1,968,194	1,970,071	1,971,795	23,986,053
	12 Operation & Maintenance Expense	384,623	160,938	211,084	119,730	305,724	241,677	381,048	296,387	239,297	245,925	251,269	131,331	2,969,034
	13 Depreciation Expense	880,017	882,195	883,948	884,364	884,981	886,362	887,066	892,209	899,561	902,471	910,240	917,980	10,711,396
	14 Property Tax	-	-	-	-	-	-	-	-	-	-	-	-	-
	15 Revenue Requirements	3,342,689	3,111,482	3,154,429	3,053,999	3,234,054	3,166,568	3,297,414	3,209,741	3,157,596	3,161,947	3,162,355	3,037,020	38,089,295
<b>D</b>	<b>Stand Alone Taxable Income or Loss (NOL)</b>													
	1 Revenue Requirements	3,342,689	3,111,482	3,154,429	3,053,999	3,234,054	3,166,568	3,297,414	3,209,741	3,157,596	3,161,947	3,162,355	3,037,020	38,089,295
	2 Tax Depreciation	1,301,422	1,257,090	1,202,925	937,150	1,252,489	1,123,451	1,091,622	2,199,889	1,638,517	1,141,718	2,744,251	1,174,719	17,065,243
	3 Property Tax	-	-	-	-	-	-	-	-	-	-	-	-	-
	4 Interest Expense (including on CWIP)	434,423	432,396	430,524	428,540	427,169	426,162	424,232	422,528	422,024	420,940	418,284	415,538	5,102,759
	5 Operation & Maintenance Expense	384,623	160,938	211,084	119,730	305,724	241,677	381,048	296,387	239,297	245,925	251,269	131,331	2,969,034
	6 Total Tax Deduction	2,120,468	1,850,424	1,844,533	1,485,420	1,985,382	1,791,290	1,896,902	2,918,803	2,299,838	1,808,582	3,413,804	1,721,587	25,137,035
	7 Taxable Income (NOL)	1,222,221	1,261,059	1,309,895	1,568,579	1,248,672	1,375,278	1,400,512	290,938	857,758	1,353,365	(251,450)	1,315,433	12,952,260
	8 Current tax expense	505,632	521,700	541,904	648,921	516,576	568,952	579,391	120,362	354,854	559,887	(104,025)	544,194	5,358,348
	9 Taxable Income (NOL)	1,222,221	1,261,059	1,309,895	1,568,579	1,248,672	1,375,278	1,400,512	290,938	857,758	1,353,365	(251,450)	1,315,433	12,952,260
	10 NOL carryforward	(89,132,888)	(87,929,077)	(86,686,996)	(85,398,044)	(83,854,488)	(82,636,824)	(81,298,416)	(79,938,424)	(79,569,300)	(78,744,729)	(77,427,240)	(77,562,374)	(77,562,374)
	11 Taxable Income after NOL carryforward	(87,910,667)	(86,668,018)	(85,377,101)	(83,829,465)	(82,605,816)	(81,261,545)	(79,897,904)	(79,541,009)	(78,711,542)	(77,391,365)	(77,550,988)	(76,246,941)	(76,246,941)
	12 Expected stand alone ADITA NOL	36,376,259	35,862,410	35,329,171	34,690,602	34,186,854	33,633,154	33,070,526	32,917,819	32,576,695	32,031,649	32,087,554	31,548,567	31,548,567
<b>E</b>	<b>Summary: Revenue Requirements</b>													
	1 Revenue Requirement: Consolidated	2,971,858	2,745,774	2,794,021	2,699,524	2,885,362	2,823,230	2,959,727	2,875,675	2,826,030	2,834,867	2,837,751	2,714,863	33,968,682
	2 Revenue Requirement: Stand Alone	3,342,689	3,111,482	3,154,429	3,053,999	3,234,054	3,166,568	3,297,414	3,209,741	3,157,596	3,161,947	3,162,355	3,037,020	38,089,295
	3 Revenue Requirement: Rider 1/	2,971,858	2,745,774	2,794,021	2,699,524	2,885,362	2,823,230	2,959,727	2,875,675	2,826,030	2,834,867	2,837,751	2,714,863	33,968,682
	4 Revenue Credit for Basin's Share	(586,884)	(544,806)	(553,942)	(536,402)	(571,267)	(559,727)	(585,266)	(569,604)	(560,446)	(562,161)	(562,667)	(539,605)	(6,732,778)
	5 BEC 4 Base Rate Revenue Credit	(151,655)	(151,655)	(151,655)	(151,655)	(151,655)	(151,655)	(151,655)	(151,655)	(151,655)	(151,655)	(151,655)	(151,655)	(1,819,866)
	6 Total Net Revenue Requirements	2,233,319	2,049,313	2,088,423	2,011,466	2,162,439	2,111,847	2,222,806	2,154,416	2,113,928	2,121,050	2,123,428	2,023,602	25,416,038
	7 MN Jurisdictional Allocator 2/	0.83043	0.83043	0.83043	0.83043	0.83043	0.83043	0.83043	0.83043	0.83043	0.83043	0.83043	0.83043	0.83043
	8 MN Jurisdictional Revenue Requirement	1,854,615	1,701,811	1,734,289	1,670,382	1,795,754	1,753,741	1,845,885	1,789,091	1,755,469	1,761,384	1,763,359	1,680,460	21,106,241

1/ Lesser of E1 or E2.  
2/ Refer to Exhibit B-5, page 1.

Minnesota Power  
BEC4 Rider

2017 Revenue Requirements: Total Sum All Projects

**2017 Revenue Requirements**

**Total Sum: Continuing Rider Projects**

Ash Pond and Basin Revenue Credit only

Section	Line	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Total Year Dec-17
<b>A</b>	<b>Book Basis of Property</b>													
	0 CWIP (net of contra AFDC & internal costs)	1,739,248	1,707,207	1,711,715	1,713,734	1,711,238	1,711,258	1,712,104	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813
	1 Plant in Service (net of contra AFDC & Interr	-	-	-	-	-	-	-	-	-	-	-	-	-
	2 Total Accumulated Depreciation	-	-	-	-	-	-	-	-	-	-	-	-	-
	3 Net Plant	-	-	-	-	-	-	-	-	-	-	-	-	-
	4 Total Depreciation	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>B</b>	<b>Tax Basis of Property</b>													
	1 Plant in Service	-	-	-	-	-	-	-	-	-	-	-	-	-
	2 Accumulated Depreciation	-	-	-	-	-	-	-	-	-	-	-	-	-
	3 Net Plant	-	-	-	-	-	-	-	-	-	-	-	-	-
	4 Bonus Depreciation	-	-	-	-	-	-	-	-	-	-	-	-	-
	5 Total Tax Depreciation (including bonus)	-	-	-	-	-	-	-	-	-	-	-	-	-
	6 Tax Book Difference	-	-	-	-	-	-	-	-	-	-	-	-	-
	7 Income Tax Rate	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%
	8 Accumulated Deferred Income Tax Liability	-	-	-	-	-	-	-	-	-	-	-	-	-
	9 Deferred Tax Expense debit / (Credit)	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>C</b>	<b>Revenue Requirements</b>													
	1 Net Plant	-	-	-	-	-	-	-	-	-	-	-	-	-
	2 Less: ADITL - Def Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-
	3 Rate Base	-	-	-	-	-	-	-	-	-	-	-	-	-
	4 Average Rate Base	-	-	-	-	-	-	-	-	-	-	-	-	-
	5 Current Return on CWIP	17,431	17,448	17,308	17,341	17,339	17,326	17,331	17,364	17,393	17,393	17,393	17,393	208,460
	6 Return on Average Rate Base	-	-	-	-	-	-	-	-	-	-	-	-	-
	7 After Tax Return on Equity	-	-	-	-	-	-	-	-	-	-	-	-	-
	8 Income Tax Component	-	-	-	-	-	-	-	-	-	-	-	-	-
	9 Interest Expense Component	-	-	-	-	-	-	-	-	-	-	-	-	-
	10 Total Return on Average Rate Base	-	-	-	-	-	-	-	-	-	-	-	-	-
	11 Operation & Maintenance Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 Depreciation Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
	13 Property Tax	-	-	-	-	-	-	-	-	-	-	-	-	-
	14 Revenue Requirements	17,431	17,448	17,308	17,341	17,339	17,326	17,331	17,364	17,393	17,393	17,393	17,393	208,460
<b>D</b>	<b>Summary: Revenue Requirements</b>													
	1 Revenue Requirement	17,431	17,448	17,308	17,341	17,339	17,326	17,331	17,364	17,393	17,393	17,393	17,393	208,460
	2 Revenue Credit for Basin's Share	(560,117)	(562,055)	(574,235)	(522,497)	(560,789)	(540,015)	(543,906)	(550,483)	(554,536)	(521,321)	(536,008)	(527,216)	(6,553,178)
	3 Total Net Revenue Requirements	(542,686)	(544,608)	(556,927)	(505,155)	(543,450)	(522,689)	(526,576)	(533,119)	(537,143)	(503,928)	(518,616)	(509,823)	(6,344,719)
	4 MN Jurisdictional Allocator 1/	0.83043	0.83043	0.83043	0.83043	0.83043	0.83043	0.83043	0.83043	0.83043	0.83043	0.83043	0.83043	0.83043
	5 MN Jurisdictional Revenue Requirement	(450,662)	(452,258)	(462,489)	(419,496)	(451,297)	(434,057)	(437,284)	(442,718)	(446,060)	(418,477)	(430,674)	(423,373)	(5,268,845)

1/ Refer to Exhibit B-5, page 1.

2018 Revenue Requirements: Total Sum All Projects

**2018 Revenue Requirements**

**Total Sum: Continuing Rider Projects**

Ash Pond and Basin Revenue Credit only

Section Line	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Total Year Dec-18
<b>A Book Basis of Property</b>													
0 CWIP (net of contra AFDC & internal costs) 1/	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813
1 Plant in Service (net of contra AFDC & Internal costs)	-	-	-	-	-	-	-	-	-	-	-	-	-
2 Total Accumulated Depreciation	-	-	-	-	-	-	-	-	-	-	-	-	-
3 Net Plant	-	-	-	-	-	-	-	-	-	-	-	-	-
4 Total Depreciation	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>B Tax Basis of Property</b>													
1 Plant in Service	-	-	-	-	-	-	-	-	-	-	-	-	-
2 Accumulated Depreciation	-	-	-	-	-	-	-	-	-	-	-	-	-
3 Net Plant	-	-	-	-	-	-	-	-	-	-	-	-	-
4 Bonus Depreciation	-	-	-	-	-	-	-	-	-	-	-	-	-
5 Total Tax Depreciation (including bonus)	-	-	-	-	-	-	-	-	-	-	-	-	-
6 Tax Book Difference	-	-	-	-	-	-	-	-	-	-	-	-	-
7 Income Tax Rate	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%
8 Accumulated Deferred Income Tax Liability	-	-	-	-	-	-	-	-	-	-	-	-	-
9 Deferred Tax Expense debit / (Credit)	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>C Revenue Requirements</b>													
1 Net Plant	-	-	-	-	-	-	-	-	-	-	-	-	-
2 Less: ADITL - Def Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-
3 Rate Base	-	-	-	-	-	-	-	-	-	-	-	-	-
4 Average Rate Base	-	-	-	-	-	-	-	-	-	-	-	-	-
5 Current Return on CWIP 1/	17,393	17,393	17,393	17,393	17,393	17,393	17,393	17,393	17,393	17,393	17,393	15,140	206,462
6 Return on Average Rate Base	-	-	-	-	-	-	-	-	-	-	-	-	-
7 After Tax Return on Equity	-	-	-	-	-	-	-	-	-	-	-	-	-
8 Income Tax Component	-	-	-	-	-	-	-	-	-	-	-	-	-
9 Interest Expense Component	-	-	-	-	-	-	-	-	-	-	-	-	-
10 Total Return on Average Rate Base	-	-	-	-	-	-	-	-	-	-	-	-	-
11 Operation & Maintenance Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
12 Depreciation Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
13 Property Tax	-	-	-	-	-	-	-	-	-	-	-	-	-
14 Revenue Requirements	17,393	17,393	17,393	17,393	17,393	17,393	17,393	17,393	17,393	17,393	17,393	15,140	206,462
<b>D Summary: Revenue Requirements</b>													
1 Revenue Requirement	17,393	17,393	17,393	17,393	17,393	17,393	17,393	17,393	17,393	17,393	17,393	15,140	206,462
2 Revenue Credit for Basin's Share 2/	(530,383)	(524,500)	(526,454)	(515,347)	(522,525)	(519,255)	(518,597)	(516,632)	(513,362)	(499,642)	(509,433)	(395,293)	(6,091,422)
3 Total Net Revenue Requirements	(512,990)	(507,107)	(509,061)	(497,954)	(505,133)	(501,862)	(501,204)	(499,239)	(495,969)	(482,249)	(492,040)	(380,152)	(5,884,960)
4 MN Jurisdictional Allocator 3/	0.83043	0.83043	0.83043	0.83043	0.83043	0.83043	0.83043	0.83043	0.83043	0.83043	0.83043	0.83043	0.8436
5 MN Jurisdictional Revenue Requirement	(426,002)	(421,117)	(422,740)	(413,516)	(419,477)	(416,761)	(416,215)	(414,583)	(411,867)	(400,474)	(408,605)	(320,697)	(4,892,054)

1/ Refer to Exhibit B-2, page 1, line A0.  
 2/ Refer to Exhibit B-2, sum lines C11 on pages 2 -5.  
 3/ Refer to Exhibit B-5, pages 1 and 4.

**PUBLIC DOCUMENT**  
**TRADE SECRET DATA EXCISED**

Minnesota Power  
BEC4 Rider  
Revenue Requirements: Boswell Ash Pond Phase 1

Exhibit B-2  
Page 1 of 5

Boswell Ash Pond Phase 1  
Project D # 106072  
In Service 12/31/2019

Section	Line	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18
<b>A</b>	<b>Book Basis of Property</b>												
	0 CWIP (net of contra AFUDC & internal costs) 1/	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813
	1 Plant in Service (net of contra AFUDC & Internal costs) 1/												
	2 Total Accumulated Depreciation	-	-	-	-	-	-	-	-	-	-	-	-
	3 Net Plant	-	-	-	-	-	-	-	-	-	-	-	-
	4 Total Depreciation	-	-	-	-	-	-	-	-	-	-	-	-
	5 Book Depreciation Rate (BEC4, life 2050)												
<b>B</b>	<b>Tax Basis of Property</b>												
	1 Plant in Service	-	-	-	-	-	-	-	-	-	-	-	-
	2 Accumulated Depreciation	-	-	-	-	-	-	-	-	-	-	-	-
	3 Net Plant	-	-	-	-	-	-	-	-	-	-	-	-
	4 Bonus Depreciation												
	5 Tax Depreciation Rate 12/2019 Plant 2/												
	6 Tax Book Difference	-	-	-	-	-	-	-	-	-	-	-	-
	7 Income Tax Rate 3/	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%
	8 Accumulated Deferred Income Tax Liability	-	-	-	-	-	-	-	-	-	-	-	-
	9 Deferred Tax Expense debit / (Credit)	-	-	-	-	-	-	-	-	-	-	-	-
<b>C</b>	<b>Revenue Requirements</b>												
	1 Net Plant	-	-	-	-	-	-	-	-	-	-	-	-
	2 Less: ADITL - Def Taxes	-	-	-	-	-	-	-	-	-	-	-	-
	3 Rate Base	-	-	-	-	-	-	-	-	-	-	-	-
	4 Average Rate Base	-	-	-	-	-	-	-	-	-	-	-	-
	5 Current Return on CWIP 4/	17,393	17,393	17,393	17,393	17,393	17,393	17,393	17,393	17,393	17,393	17,393	15,140
	6 Return on Average Rate Base 4/												
	7 After Tax Return on Equity	-	-	-	-	-	-	-	-	-	-	-	-
	8 Income Tax Component	-	-	-	-	-	-	-	-	-	-	-	-
	9 Interest Expense Component	-	-	-	-	-	-	-	-	-	-	-	-
	10 Total Return on Average Rate Base	-	-	-	-	-	-	-	-	-	-	-	-
	11 Operation & Maintenance Expense	-	-	-	-	-	-	-	-	-	-	-	-
	12 Depreciation Expense	-	-	-	-	-	-	-	-	-	-	-	-
	13 Property Tax 5/	-	-	-	-	-	-	-	-	-	-	-	-
	14 Revenue Requirements	17,393	17,393	17,393	17,393	17,393	17,393	17,393	17,393	17,393	17,393	17,393	15,140

1/ Refer to Exhibit B-3.

2/ Refer to Exhibit B-6

3/ Minnesota Composite Income Tax Rate.

4/ Current Return on CWIP starts 10/1/13 (Avg. Monthly CWIP x ROR% / 12). Refer to Exhibit B-3 for CWIP calculations.

For pre-tax rate of returns, refer to Exhibit B-4.

5/ Project assumed to qualify for 100% property tax pollution control exemption per Tax Department.

**PUBLIC DOCUMENT**  
**TRADE SECRET DATA EXCISED**

Exhibit B-2  
Page 2 of 5

Minnesota Power  
BEC 4 Rider  
Basin's Revenue Requirements: Boswell 4 Environmental Retrofit

BEC 4 Environmental Retrofit: Basin  
Project D # 103698  
In Service 12/31/2015

Section	Line	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18
<b>A</b>	<b>Book Basis of Property</b>												
	0 CWIP 1/												
	1 Plant in Service	223,427,863	223,427,863	223,427,863	223,427,863	223,427,863	223,427,863	223,427,863	223,427,863	223,427,863	223,427,863	223,427,863	223,427,863
	2 Total Accumulated Depreciation	23,647,107	24,578,056	25,509,005	26,439,955	27,370,904	28,301,854	29,232,803	30,163,753	31,094,702	32,025,651	32,956,601	33,538,444
	3 Net Plant	199,780,756	198,849,807	197,918,858	196,987,908	196,056,959	195,126,009	194,195,060	193,264,110	192,333,161	191,402,212	190,471,262	189,889,419
	4 Total Depreciation	930,949	930,949	930,949	930,949	930,949	930,949	930,949	930,949	930,949	930,949	930,949	581,843
	5 Book Depreciation Rate (Life to 2035/2050) /6	0.42%	0.42%	0.42%	0.42%	0.42%	0.42%	0.42%	0.42%	0.42%	0.42%	0.42%	0.26%
<b>B</b>	<b>Tax Basis of Property</b>												
	1 Plant in Service	223,427,863	223,427,863	223,427,863	223,427,863	223,427,863	223,427,863	223,427,863	223,427,863	223,427,863	223,427,863	223,427,863	223,427,863
	2 Accumulated Depreciation	139,393,213	140,428,114	141,463,015	142,497,916	143,532,817	144,567,718	145,602,619	146,637,520	147,672,421	148,707,322	149,742,223	150,777,124
	3 Net Plant	84,034,650	82,999,749	81,964,848	80,929,947	79,895,046	78,860,145	77,825,244	76,790,343	75,755,442	74,720,541	73,685,640	72,650,739
	4 Bonus Depreciation (50%)												
	5 Total Tax Depreciation (including bonus) /2	1,034,901	1,034,901	1,034,901	1,034,901	1,034,901	1,034,901	1,034,901	1,034,901	1,034,901	1,034,901	1,034,901	1,034,901
	6 Tax Book Difference	115,746,106	115,850,058	115,954,009	116,057,961	116,161,912	116,265,864	116,369,816	116,473,767	116,577,719	116,681,670	116,785,622	117,238,680
	7 Income Tax Rate 3/	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%
	8 Accumulated Deferred Income Tax Liability	47,884,164	47,927,169	47,970,174	48,013,178	48,056,183	48,099,188	48,142,193	48,185,198	48,228,202	48,271,207	48,314,212	48,501,642
	9 Deferred Tax Expense debit / (Credit)	43,005	43,005	43,005	43,005	43,005	43,005	43,005	43,005	43,005	43,005	43,005	187,430
<b>C</b>	<b>Revenue Requirements - Basin</b>												
	1 Net Plant	199,780,756	198,849,807	197,918,858	196,987,908	196,056,959	195,126,009	194,195,060	193,264,110	192,333,161	191,402,212	190,471,262	189,889,419
	2 Less: ADITL - Def Taxes	(47,884,164)	(47,927,169)	(47,970,174)	(48,013,178)	(48,056,183)	(48,099,188)	(48,142,193)	(48,185,198)	(48,228,202)	(48,271,207)	(48,314,212)	(48,501,642)
	3 Plus: ADITA - NOL	-	-	-	-	-	-	-	-	-	-	-	-
	4 Plus: ADITA - PTC	-	-	-	-	-	-	-	-	-	-	-	-
	3 Rate Base	151,896,592	150,922,638	149,948,684	148,974,730	148,000,775	147,026,821	146,052,867	145,078,913	144,104,959	143,131,004	142,157,050	141,387,777
	4 Average Rate Base	152,383,569	151,409,615	150,435,661	149,461,707	148,487,753	147,513,798	146,539,844	145,565,890	144,591,936	143,617,982	142,644,027	141,772,414
	5 Current Return on CWIP 4/												
	6 Return on Average Rate Base 4/	299,045	297,134	295,222	293,311	291,400	289,488	287,577	285,666	283,754	281,843	279,932	233,541
	7 Operation & Maintenance Expense	40,490	36,572	40,490	31,347	40,490	39,184	40,490	40,490	39,184	27,429	39,184	40,490
	8 Depreciation Expense	173,994	173,994	173,994	173,994	173,994	173,994	173,994	173,994	173,994	173,994	173,994	108,747
	9 Property Tax 5/	-	-	-	-	-	-	-	-	-	-	-	-
	10 Revenue Requirements - Basin	513,530	507,700	509,707	498,653	505,885	502,667	502,062	500,151	496,933	483,266	493,110	382,778
	11 Revenue Credit for Basin's Share	(513,530)	(507,700)	(509,707)	(498,653)	(505,885)	(502,667)	(502,062)	(500,151)	(496,933)	(483,266)	(493,110)	(382,778)

1/ Refer to Exhibit B-3, page 22-27.

2/ Refer to Exhibit B-6 for tax depreciation rates. [TRADE SECRET DATA EXCISED]

3/ Minnesota Composite Income Tax Rate.

4/ Revenue credit for Basin's share starts 5/1/15 for 5 years ending 4/31/20 calculated with pre-tax ROR of 12.6% until 11/30/18, and then at 10.5765%. Refer to Exhibit B-3, pages 22-27, for Basin's CWIP calculations.

5/ Project assumed to qualify for 100% property tax pollution control exemption per Tax Department.

6/ Life to 2035 until 11/30/2018, then to 2050 coincident with Final Rates implementation in Rate Case Docket E015/GR-16-664.

**PUBLIC DOCUMENT**  
**TRADE SECRET DATA EXCISED**

Minnesota Power  
BEC4 Rider  
Basin Revenue Requirements: Boswell Storm Water Project

Boswell Storm Water Project: Basin  
Project D # 107641  
In Service 11/1/2016

Section Line	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18
<b>A Book Basis of Property</b>												
0 CWIP 1/												
1 Plant in Service	3,951,327	3,951,327	3,951,327	3,951,327	3,951,327	3,951,327	3,951,327	3,951,327	3,951,327	3,951,327	3,951,327	3,951,327
2 Total Accumulated Depreciation	251,253	268,584	285,914	303,244	320,575	337,905	355,236	372,566	389,896	407,227	424,557	434,847
3 Net Plant	3,700,074	3,682,743	3,665,413	3,648,083	3,630,752	3,613,422	3,596,091	3,578,761	3,561,431	3,544,100	3,526,770	3,516,480
4 Total Depreciation	17,330	17,330	17,330	17,330	17,330	17,330	17,330	17,330	17,330	17,330	17,330	10,290
5 Book Depreciation Rate (Life to 2035/2050) /6	0.44%	0.44%	0.44%	0.44%	0.44%	0.44%	0.44%	0.44%	0.44%	0.44%	0.44%	0.26%
<b>B Tax Basis of Property</b>												
1 Plant in Service	3,951,327	3,951,327	3,951,327	3,951,327	3,951,327	3,951,327	3,951,327	3,951,327	3,951,327	3,951,327	3,951,327	3,951,327
2 Accumulated Depreciation	2,306,596	2,325,105	2,343,614	2,362,123	2,380,633	2,399,142	2,417,651	2,436,160	2,454,669	2,473,178	2,491,687	2,510,196
3 Net Plant	1,644,731	1,626,222	1,607,713	1,589,204	1,570,694	1,552,185	1,533,676	1,515,167	1,496,658	1,478,149	1,459,640	1,441,131
4 Bonus Depreciation (50%)												
5 Total Tax Depreciation (including bonus) /2	18,509	18,509	18,509	18,509	18,509	18,509	18,509	18,509	18,509	18,509	18,509	18,509
6 Tax Book Difference	2,055,343	2,056,521	2,057,700	2,058,879	2,060,058	2,061,236	2,062,415	2,063,594	2,064,773	2,065,951	2,067,130	2,075,349
7 Income Tax Rate 3/	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%
8 Accumulated Deferred Income Tax Liability	850,295	850,783	851,271	851,758	852,246	852,734	853,221	853,709	854,196	854,684	855,172	858,572
9 Deferred Tax Expense debit / (Credit)	488	488	488	488	488	488	488	488	488	488	488	3,400
<b>C Revenue Requirements - Basin</b>												
1 Net Plant	3,700,074	3,682,743	3,665,413	3,648,083	3,630,752	3,613,422	3,596,091	3,578,761	3,561,431	3,544,100	3,526,770	3,516,480
2 Less: ADITL - Def Taxes	(850,295)	(850,783)	(851,271)	(851,758)	(852,246)	(852,734)	(853,221)	(853,709)	(854,196)	(854,684)	(855,172)	(858,572)
3 Rate Base	2,849,778	2,831,960	2,814,142	2,796,324	2,778,506	2,760,688	2,742,870	2,725,052	2,707,234	2,689,416	2,671,598	2,657,908
4 Average Rate Base	2,858,687	2,840,869	2,823,051	2,805,233	2,787,415	2,769,597	2,751,779	2,733,961	2,716,143	2,698,325	2,680,507	2,664,753
5 Current Return on CWIP 4/												
6 Return on Average Rate Base 4/	5,610	5,575	5,540	5,505	5,470	5,435	5,400	5,365	5,330	5,295	5,260	4,390
7 Operation & Maintenance Expense	-	-	-	-	-	-	-	-	-	-	-	-
8 Depreciation Expense	3,239	3,239	3,239	3,239	3,239	3,239	3,239	3,239	3,239	3,239	3,239	1,923
9 Property Tax 5/	-	-	-	-	-	-	-	-	-	-	-	-
10 Revenue Requirements - Basin	8,849	8,814	8,779	8,744	8,709	8,674	8,639	8,604	8,569	8,534	8,499	6,313
11 Revenue Credit for Basin's Share	(8,849)	(8,814)	(8,779)	(8,744)	(8,709)	(8,674)	(8,639)	(8,604)	(8,569)	(8,534)	(8,499)	(6,313)

1/ Refer to Exhibit B-3, page 22-27.

2/ Refer to Exhibit B-6.

3/ Minnesota Composite Income Tax Rate.

[TRADE SECRET DATA EXCISED]

4/ Revenue credit for Basin's share starts 5/1/15 for 5 years ending 4/31/20 calculated with pre-tax ROR of 12.6% until 11/30/18, and then at 10.5765%. Refer to Exhibit B-3, pages 22-27, for Basin's CW P calculations.

The revenue credit for Basin's share also includes all other revenue requirement costs.

5/ Project assumed to qualify for 100% property tax pollution control exemption per Tax Department.

6/ Life to 2035 until 11/30/2018, then to 2050 coincident with Final Rates implementation in Rate Case Docket E015/GR-16-664.



**PUBLIC DOCUMENT**  
**TRADE SECRET DATA EXCISED**

Exhibit B-2  
Page 4 of 5

BEC4 Ash Haul Route Improvement and Equipment: Basin  
Project D # 107825  
In Service 8/31/2016

Minnesota Power  
BEC 4 Rider  
Basin's Revenue Requirements: Ash Haul Route Improvement and Equipment

Section Line	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18
<b>A Book Basis of Property</b>												
0 CWIP 1/												
1 Plant in Service	2,103,245	2,103,245	2,103,245	2,103,245	2,103,245	2,103,245	2,103,245	2,103,245	2,103,245	2,103,245	2,103,245	2,103,245
2 Total Accumulated Depreciation	153,603	162,367	171,130	179,894	188,657	197,421	206,184	214,948	223,711	232,475	241,238	246,715
3 Net Plant	1,949,642	1,940,879	1,932,115	1,923,352	1,914,588	1,905,825	1,897,061	1,888,298	1,879,534	1,870,770	1,862,007	1,856,530
4 Total Depreciation	8,764	8,764	8,764	8,764	8,764	8,764	8,764	8,764	8,764	8,764	8,764	8,764
5 Book Depreciation Rate (Life to 2035/2050) /6	0.42%	0.42%	0.42%	0.42%	0.42%	0.42%	0.42%	0.42%	0.42%	0.42%	0.42%	0.26%
<b>B Tax Basis of Property</b>												
1 Plant in Service	2,103,245	2,103,245	2,103,245	2,103,245	2,103,245	2,103,245	2,103,245	2,103,245	2,103,245	2,103,245	2,103,245	2,103,245
2 Accumulated Depreciation	1,227,801	1,237,653	1,247,505	1,257,358	1,267,210	1,277,062	1,286,914	1,296,766	1,306,618	1,316,471	1,326,323	1,336,175
3 Net Plant	875,444	865,592	855,740	845,888	836,035	826,183	816,331	806,479	796,627	786,775	776,922	767,070
4 Bonus Depreciation (50%)												
5 Total Tax Depreciation (including bonus) 2/	9,852	9,852	9,852	9,852	9,852	9,852	9,852	9,852	9,852	9,852	9,852	9,852
6 Tax Book Difference	1,074,198	1,075,287	1,076,375	1,077,464	1,078,553	1,079,641	1,080,730	1,081,819	1,082,907	1,083,996	1,085,084	1,089,459
7 Income Tax Rate 3/	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%
8 Accumulated Deferred Income Tax Liability	444,396	444,846	445,297	445,747	446,197	446,648	447,098	447,548	447,999	448,449	448,899	450,709
9 Deferred Tax Expense debit / (Credit)	450	450	450	450	450	450	450	450	450	450	450	1,810
<b>C Revenue Requirements - Basin 4/</b>												
1 Net Plant	1,949,642	1,940,879	1,932,115	1,923,352	1,914,588	1,905,825	1,897,061	1,888,298	1,879,534	1,870,770	1,862,007	1,856,530
2 Less: ADITL - Def Taxes	(444,396)	(444,846)	(445,297)	(445,747)	(446,197)	(446,648)	(447,098)	(447,548)	(447,999)	(448,449)	(448,899)	(450,709)
3 Plus: ADITA - NOL	-	-	-	-	-	-	-	-	-	-	-	-
4 Plus: ADITA - PTC	-	-	-	-	-	-	-	-	-	-	-	-
3 Rate Base	1,505,246	1,496,032	1,486,819	1,477,605	1,468,391	1,459,177	1,449,963	1,440,749	1,431,535	1,422,321	1,413,108	1,405,820
4 Average Rate Base	1,509,853	1,500,639	1,491,426	1,482,212	1,472,998	1,463,784	1,454,570	1,445,356	1,436,142	1,426,928	1,417,714	1,409,464
5 Current Return on CWIP 4/												
6 Return on Average Rate Base 4/	2,963	2,945	2,927	2,909	2,891	2,873	2,855	2,836	2,818	2,800	2,782	2,322
7 Operation & Maintenance Expense	-	-	-	-	-	-	-	-	-	-	-	-
8 Depreciation Expense	1,638	1,638	1,638	1,638	1,638	1,638	1,638	1,638	1,638	1,638	1,638	1,024
9 Property Tax 5/	-	-	-	-	-	-	-	-	-	-	-	-
10 Revenue Requirements - Basin	4,601	4,583	4,565	4,547	4,529	4,511	4,492	4,474	4,456	4,438	4,420	3,345
11 Revenue Credit for Basin's Share	(4,601)	(4,583)	(4,565)	(4,547)	(4,529)	(4,511)	(4,492)	(4,474)	(4,456)	(4,438)	(4,420)	(3,345)

1/ Refer to Exhibit B-3, page 22-27.

2/ Refer to Exhibit B-6.

3/ Minnesota Composite Income Tax Rate.

4/ Revenue credit for Basin's [REDACTED] share starts 5/1/15 for 5 years ending 4/31/20 calculated with pre-tax ROR of 12.6% until 11/30/18, and then at 10.5765%. Refer to Exhibit B-3, pages 22-27, for Basin's CWIP calculations.

5/ Project assumed to qualify for 100% property tax pollution control exemption per Tax Department.

6/ Life to 2035 until 11/30/2018, then to 2050 coincident with Final Rates implementation in Rate Case Docket E015/GR-16-664.

[TRADE SECRET DATA EXCISED]

**PUBLIC DOCUMENT**  
**TRADE SECRET DATA EXCISED**

Exhibit B-2  
Page 5 of 5

Minnesota Power  
BEC4 Rider  
Basin Revenue Requirements: Boswell Ash Pond Phase 1

Boswell Ash Pond Phase 1: Basin  
Project ID # 106072  
In Service 12/31/2019

Section	Line	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18
<b>A</b>	<b>Book Basis of Property</b>												
	0 CWIP 1/	1,734,043	1,734,048	1,734,053	1,734,058	1,734,063	1,734,068	1,734,073	1,734,078	1,734,083	1,734,088	1,734,093	1,734,098
	1 Plant in Service												
	2 Total Accumulated Depreciation	-	-	-	-	-	-	-	-	-	-	-	-
	3 Net Plant	-	-	-	-	-	-	-	-	-	-	-	-
	4 Total Depreciation	-	-	-	-	-	-	-	-	-	-	-	-
	5 Book Depreciation Rate (Life to 2035/2050) /6												
<b>B</b>	<b>Tax Basis of Property</b>												
	1 Plant in Service	-	-	-	-	-	-	-	-	-	-	-	-
	2 Accumulated Depreciation	-	-	-	-	-	-	-	-	-	-	-	-
	3 Net Plant	-	-	-	-	-	-	-	-	-	-	-	-
	4 Bonus Depreciation (30%)												
	5 Total Tax Depreciation (including bonus) 2/	-	-	-	-	-	-	-	-	-	-	-	-
	6 Tax Book Difference	-	-	-	-	-	-	-	-	-	-	-	-
	7 Income Tax Rate 3/	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%	41.37%
	8 Accumulated Deferred Income Tax Liability	-	-	-	-	-	-	-	-	-	-	-	-
	9 Deferred Tax Expense debit / (Credit)	-	-	-	-	-	-	-	-	-	-	-	-
<b>C</b>	<b>Revenue Requirements - Basin</b>												
	1 Net Plant	-	-	-	-	-	-	-	-	-	-	-	-
	2 Less: ADITL - Def Taxes	-	-	-	-	-	-	-	-	-	-	-	-
	3 Plus: ADITA - NOL	-	-	-	-	-	-	-	-	-	-	-	-
	4 Plus: ADITA - PTC	-	-	-	-	-	-	-	-	-	-	-	-
	3 Rate Base	-	-	-	-	-	-	-	-	-	-	-	-
	4 Average Rate Base	-	-	-	-	-	-	-	-	-	-	-	-
	5 Current Return on CWIP 4/	3,403	3,403	3,403	3,403	3,403	3,403	3,403	3,403	3,403	3,403	3,403	2,857
	6 Return on Average Rate Base 4/	-	-	-	-	-	-	-	-	-	-	-	-
	7 Operation & Maintenance Expense	-	-	-	-	-	-	-	-	-	-	-	-
	8 Depreciation Expense	-	-	-	-	-	-	-	-	-	-	-	-
	9 Property Tax 5/	-	-	-	-	-	-	-	-	-	-	-	-
	10 Revenue Requirements - Basin	3,403	3,403	3,403	3,403	3,403	3,403	3,403	3,403	3,403	3,403	3,403	2,857
	11 Revenue Credit for Basin's Share	(3,403)	(3,403)	(3,403)	(3,403)	(3,403)	(3,403)	(3,403)	(3,403)	(3,403)	(3,403)	(3,403)	(2,857)

1/ Refer to Exhibit B-3, page 23-28.

2/ Refer to Exhibit B-6.

3/ Minnesota Composite Income Tax Rate.

4/ Revenue credit for Basin's [REDACTED] share starts 5/1/15 for 5 years ending 4/31/20 calculated with pre-tax ROR of 12.6% until 11/30/18, and then at 10.5765%. Refer to Exhibit B-3, pages 22-27, for Basin's CWIP calculations.

5/ Project assumed to qualify for 100% property tax pollution control exemption per Tax Department.

6/ Life to 2035 until 11/30/2018, then to 2050 coincident with Final Rates implementation in Rate Case Docket E015/GR-16-664.

[TRADE SECRET DATA EXCISED]



Minnesota Power  
BEC 4 Rider  
Plant Additions, AFUDC and Return on CWIP

	Total Project	to date Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14
<b>BEC 4 Ash Phase 3</b>	<b>2,160,560</b>																			
In Service 12/31/2023																				
BOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CapEx	2,160,560																			
Less Internal Cost	0																			
AFUDC	0																			
Less AFUDC on Internal Cost	0																			
EOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Return on CWIP																				
After Tax Return on Equity																				
Income Tax Component																				
Interest Expense Component																				
Total Return on CWIP																				
<b>BEC 4 Ash Phase 4</b>	<b>2,940,724</b>																			
In Service 12/31/2029																				
BOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CapEx	2,940,724																			
Less Internal Cost	0																			
AFUDC	0																			
Less AFUDC on Internal Cost	0																			
EOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Return on CWIP																				
After Tax Return on Equity																				
Income Tax Component																				
Interest Expense Component																				
Total Return on CWIP																				
<b>BEC 4 Ash Phase 5</b>	<b>3,178,613</b>																			
In Service 12/31/2035																				
BOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CapEx	3,178,613																			
Less Internal Cost	0																			
AFUDC	0																			
Less AFUDC on Internal Cost	0																			
EOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Return on CWIP																				
After Tax Return on Equity																				
Income Tax Component																				
Interest Expense Component																				
Total Return on CWIP																				
<b>Total</b>	<b>230,258,407</b>																			
BOM		0	21,039,943	23,516,640	26,181,110	30,213,705	33,332,452	34,498,171	36,725,554	40,701,839	44,263,914	48,736,841	53,347,000	58,914,810	60,653,451	67,309,385	74,393,761	84,019,187	91,690,915	99,173,129
CapEx	235,331,526	20,189,572	2,439,572	2,594,454	3,961,992	3,061,934	1,055,311	2,124,604	3,867,591	3,425,444	4,562,365	4,723,148	5,760,918	1,807,357	6,752,543	7,197,255	9,743,583	7,845,283	7,601,922	5,701,139
Less Internal Cost	-8,284,369	-923,580	-86,728	-67,342	-84,473	-117,140	-79,762	-95,645	-105,757	-97,437	-89,439	-112,989	-193,108	-68,716	-96,609	-112,879	-118,158	-173,555	-119,708	-119,683
AFUDC	4,225,629	1,890,832	130,909	144,921	163,139	182,681	199,839	208,671	225,361	245,648	14,567	15,400	16,892	17,454	18,124	18,972	19,909	21,084	22,942	23,237
Less AFUDC on Internal Cost	-1,014,379	-116,881	-7,056	-7,563	-8,063	-8,727	-9,669	-10,247	-10,910	-11,580	-14,567	-15,400	-16,892	-17,454	-18,124	-18,972	-19,908	-21,084	-22,941	-23,236
EOM		21,039,943	23,516,640	26,181,110	30,213,705	33,332,452	34,498,171	36,725,554	40,701,839	44,263,914	48,736,841	53,347,000	58,914,810	60,653,451	67,309,385	74,393,761	84,019,187	91,690,915	99,173,129	104,754,586
Return on CWIP																				
After Tax Return on Equity	17,429,592	0	0	0	0	0	0	0	0	0	218,332	239,656	263,551	280,703	300,411	332,668	371,897	412,504	448,080	478,749
Income Tax Component	12,298,533	0	0	0	0	0	0	0	0	0	154,058	169,104	185,964	198,068	211,974	234,735	262,415	291,068	316,171	337,811
Interest Expense Component	7,815,928	0	0	0	0	0	0	0	0	0	98,426	108,039	118,810	126,543	135,427	149,969	167,654	185,960	201,998	215,823
Total Return on CWIP	37,544,053	0	0	0	0	0	0	0	0	0	470,816	516,799	568,325	605,314	647,812	717,372	801,966	889,532	966,249	1,032,384







Minnesota Power  
BEC 4 Rider  
Plant Additions, AFUDC and Return on CWIP

Total Project	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17
<b>BEC 4 Ash Phase 3</b>	<b>2,160,560</b>																
In Service 12/31/2023																	
BOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CapEx	2,160,560																
Less Internal Cost	0																
AFUDC	0																
Less AFUDC on Internal Cost	0																
EOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Return on CWIP																	
After Tax Return on Equity																	
Income Tax Component																	
Interest Expense Component																	
Total Return on CWIP																	
<b>BEC 4 Ash Phase 4</b>	<b>2,940,724</b>																
In Service 12/31/2029																	
BOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CapEx	2,940,724																
Less Internal Cost	0																
AFUDC	0																
Less AFUDC on Internal Cost	0																
EOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Return on CWIP																	
After Tax Return on Equity																	
Income Tax Component																	
Interest Expense Component																	
Total Return on CWIP																	
<b>BEC 4 Ash Phase 5</b>	<b>3,178,613</b>																
In Service 12/31/2035																	
BOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CapEx	3,178,613																
Less Internal Cost	0																
AFUDC	0																
Less AFUDC on Internal Cost	0																
EOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Return on CWIP																	
After Tax Return on Equity																	
Income Tax Component																	
Interest Expense Component																	
Total Return on CWIP																	
<b>Total</b>	<b>230,258,407</b>																
BOM	209,192,849	213,221,366	213,784,560	214,408,830	215,116,488	215,627,719	216,907,058	217,754,705	218,156,507	219,264,173	220,813,190	221,332,493	221,462,990	221,913,924	221,945,059	221,909,036	221,911,613
CapEx	235,331,526	4,387,678	690,170	739,749	780,123	631,156	1,349,616	909,323	454,593	1,185,687	1,642,726	558,146	155,515	437,208	85,581	-36,132	2,567
Less Internal Cost	-8,284,369	-359,190	-127,016	-115,526	-72,523	-120,008	-70,397	-61,828	-52,960	-81,626	-93,931	-39,109	-30,204	13,727	-54,439	94	-6
AFUDC	4,225,629	61,024	211	682	1,198	1,428	-1,694	823	1,003	4,299	1,144	1,371	6,336	188	3	113	113
Less AFUDC on Internal Cost	-1,014,379	-60,995	-171	-635	-1,140	-1,344	1,814	-672	-834	-694	-923	-1,104	-1,150	-189	-9	-98	-97
EOM	213,221,366	213,784,560	214,408,830	215,116,488	215,627,719	216,907,058	217,754,705	218,156,507	219,264,173	220,813,190	221,332,493	221,462,990	221,913,924	221,945,059	221,909,036	221,911,613	221,913,631
Return on CWIP																	
After Tax Return on Equity	17,429,592	496,514	10,794	11,127	12,279	14,671	18,179	21,617	23,757	21,505	19,458	21,034	14,271	7,380	8,083	8,091	8,026
Income Tax Component	12,298,533	350,346	7,616	7,851	8,664	10,352	12,828	15,253	16,763	15,174	13,730	14,842	10,070	5,207	5,704	5,709	5,664
Interest Expense Component	7,815,928	223,832	4,866	5,016	5,535	6,614	8,195	9,745	10,710	9,695	8,772	9,482	6,433	3,327	3,644	3,647	3,618
Total Return on CWIP	37,544,053	1,070,692	23,276	23,994	26,478	31,637	39,203	46,615	51,230	46,374	41,959	45,357	30,774	15,914	17,431	17,448	17,308







Minnesota Power  
BEC 4 Rider  
Plant Additions, AFUDC and Return on CWIP

	Total Project	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
<b>BEC 4 Environmental Retrofit</b>	<b>214,344,054</b>															
In Service 12/22/2015																
BOM																
CapEx	219,220,355															
Less Internal Cost	-8,077,521															
AFUDC	4,207,508															
Less AFUDC on Internal Cost	-1,006,288															
EOM																
Return on CWIP																
After Tax Return on Equity																
Income Tax Component																
Interest Expense Component																
Total Return on CWIP																
<b>BEC 4 Storm Water</b>	<b>3,776,593</b>															
In Service 11/1/2016																
BOM																
CapEx	3,940,234															
Less Internal Cost	-169,768															
AFUDC	11,093															
Less AFUDC on Internal Cost	-4,966															
EOM																
Return on CWIP																
After Tax Return on Equity																
Income Tax Component																
Interest Expense Component																
Total Return on CWIP																
<b>BEC 4 Ash Haul Improve</b>	<b>2,079,250</b>															
In Service 8/31/2016																
BOM																
CapEx	2,098,287															
Less Internal Cost	-22,740															
AFUDC	4,958															
Less AFUDC on Internal Cost	-1,255															
EOM																
Return on CWIP																
After Tax Return on Equity																
Income Tax Component																
Interest Expense Component																
Total Return on CWIP																
<b>BEC 4 Ash Phase 1</b>	<b>1,717,813</b>															
In Service 12/31/19																
BOM		1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813
CapEx	1,731,953															
Less Internal Cost	-14,340															
AFUDC	2,070															
Less AFUDC on Internal Cost	-1,871															
EOM		1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813	1,717,813
Return on CWIP																
After Tax Return on Equity		8,066	8,066	7,126	7,126	7,126	7,126	7,126	7,126	7,126	7,126	7,126	7,126	7,126	7,126	3,563
Income Tax Component		5,691	5,691	5,028	5,028	5,028	5,028	5,028	5,028	5,028	5,028	5,028	5,028	5,028	5,028	2,514
Interest Expense Component		3,636	3,636	2,986	2,986	2,986	2,986	2,986	2,986	2,986	2,986	2,986	2,986	2,986	2,986	1,493
Total Return on CWIP		17,393	17,393	15,140	15,140	15,140	15,140	15,140	15,140	15,140	15,140	15,140	15,140	15,140	15,140	7,570
<b>BEC 4 Ash Phase 2</b>	<b>60,800</b>															
In Service 12/31/2019																
BOM		0	0	0	0	0	0	15,200	15,200	15,200	30,400	30,400	30,400	45,600	45,600	45,600
CapEx	60,800							0	0	15,200	0	0	15,200	0	0	15,200
Less Internal Cost	0							0	0	0	0	0	0	0	0	0
AFUDC	0							0	0	0	0	0	0	0	0	0
Less AFUDC on Internal Cost	0							0	0	0	0	0	0	0	0	0
EOM		0	0	0	0	0	15,200	15,200	15,200	30,400	30,400	30,400	45,600	45,600	45,600	60,800
Return on CWIP																
After Tax Return on Equity		0	0	0	0	0	32	63	63	95	126	126	158	189	189	95
Income Tax Component		0	0	0	0	0	22	44	44	67	89	89	111	133	133	67
Interest Expense Component		0	0	0	0	0	13	26	26	40	53	53	66	79	79	40
Total Return on CWIP		0	0	0	0	0	67	134	134	201	268	268	335	402	402	201

Minnesota Power  
BEC 4 Rider  
Plant Additions, AFUDC and Return on CWIP

Total Project	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	
<b>BEC 4 Ash Phase 3</b>	<b>2,160,560</b>															
In Service 12/31/2023																
BOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CapEx	2,160,560															
Less Internal Cost	0															
AFUDC	0															
Less AFUDC on Internal Cost	0															
EOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Return on CWIP																
After Tax Return on Equity																
Income Tax Component																
Interest Expense Component																
Total Return on CWIP																
<b>BEC 4 Ash Phase 4</b>	<b>2,940,724</b>															
In Service 12/31/2029																
BOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CapEx	2,940,724															
Less Internal Cost	0															
AFUDC	0															
Less AFUDC on Internal Cost	0															
EOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Return on CWIP																
After Tax Return on Equity																
Income Tax Component																
Interest Expense Component																
Total Return on CWIP																
<b>BEC 4 Ash Phase 5</b>	<b>3,178,613</b>															
In Service 12/31/2035																
BOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CapEx	3,178,613															
Less Internal Cost	0															
AFUDC	0															
Less AFUDC on Internal Cost	0															
EOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Return on CWIP																
After Tax Return on Equity																
Income Tax Component																
Interest Expense Component																
Total Return on CWIP																
<b>Total</b>	<b>230,258,407</b>															
BOM		221,917,710	221,917,710	221,917,710	221,917,710	221,917,710	221,917,710	221,932,910	221,932,910	221,932,910	221,948,110	221,948,110	221,948,110	221,963,310	221,963,310	221,963,310
CapEx	235,331,526	0	0	0	0	0	15,200	0	0	15,200	0	0	15,200	0	0	15,200
Less Internal Cost	-8,284,369	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC	4,225,629	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Less AFUDC on Internal Cost	-1,014,379	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EOM		221,917,710	221,917,710	221,917,710	221,917,710	221,917,710	221,932,910	221,932,910	221,932,910	221,948,110	221,948,110	221,948,110	221,963,310	221,963,310	221,963,310	221,978,510
Return on CWIP																
After Tax Return on Equity	17,429,592	8,066	8,066	7,126	7,126	7,126	7,158	7,189	7,189	7,221	7,252	7,252	7,284	7,315	7,315	3,658
Income Tax Component	12,298,533	5,691	5,691	5,028	5,028	5,028	5,050	5,073	5,073	5,095	5,117	5,117	5,139	5,162	5,162	2,581
Interest Expense Component	7,815,928	3,636	3,636	2,986	2,986	2,986	2,999	3,013	3,013	3,026	3,039	3,039	3,052	3,065	3,065	1,533
Total Return on CWIP	37,544,053	17,393	17,393	15,140	15,140	15,140	15,207	15,274	15,274	15,341	15,408	15,408	15,475	15,542	15,542	7,771

Minnesota Power  
BEC 4 Rider  
Plant Additions, AFUDC and Return on CWIP

Total Project	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	
<b>BEC 4 Ash Phase 3</b>	<b>2,160,560</b>																		
In Service 12/31/2023																			
BOM		0	0	0	427,500	427,500	427,500	855,000	855,000	855,000	1,282,500	1,282,500	1,282,500	1,710,000	1,710,000	1,710,000	1,726,100	1,726,100	1,726,100
CapEx	2,160,560	0	0	427,500	0	0	427,500	0	0	427,500	0	0	427,500	0	0	16,100	0	0	16,100
Less Internal Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Less AFUDC on Internal Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EOM		0	0	427,500	427,500	427,500	855,000	855,000	1,282,500	1,282,500	1,282,500	1,710,000	1,710,000	1,710,000	1,726,100	1,726,100	1,726,100	1,742,200	
Return on CWIP																			
After Tax Return on Equity	0	0	887	1,773	1,773	2,660	3,547	3,547	4,434	5,320	6,207	7,094	7,094	7,094	7,127	7,160	7,160	7,194	
Income Tax Component	0	0	626	1,251	1,251	1,877	2,503	2,503	3,128	3,754	4,380	5,005	5,005	5,005	5,029	5,052	5,052	5,076	
Interest Expense Component	0	0	372	743	743	1,115	1,486	1,486	1,858	2,229	2,229	2,601	2,973	2,973	2,987	3,001	3,001	3,015	
Total Return on CWIP	0	0	1,884	3,768	3,768	5,652	7,536	7,536	9,420	11,304	11,304	13,188	15,072	15,072	15,143	15,213	15,213	15,284	
<b>BEC 4 Ash Phase 4</b>	<b>2,940,724</b>																		
In Service 12/31/2029																			
BOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CapEx	2,940,724																		
Less Internal Cost	0																		
AFUDC	0																		
Less AFUDC on Internal Cost	0																		
EOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Return on CWIP																			
After Tax Return on Equity																			
Income Tax Component																			
Interest Expense Component																			
Total Return on CWIP																			
<b>BEC 4 Ash Phase 5</b>	<b>3,178,613</b>																		
In Service 12/31/2035																			
BOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CapEx	3,178,613																		
Less Internal Cost	0																		
AFUDC	0																		
Less AFUDC on Internal Cost	0																		
EOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Return on CWIP																			
After Tax Return on Equity																			
Income Tax Component																			
Interest Expense Component																			
Total Return on CWIP																			
<b>Total</b>	<b>230,258,407</b>																		
BOM	221,978,510	221,978,510	221,978,510	222,406,010	222,406,010	222,406,010	222,833,510	222,833,510	222,833,510	223,261,010	223,261,010	223,261,010	223,688,510	223,688,510	223,688,510	223,704,610	223,704,610	223,704,610	
CapEx	235,331,526	0	0	427,500	0	0	427,500	0	0	427,500	0	0	427,500	0	0	16,100	0	16,100	
Less Internal Cost	-8,284,369	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AFUDC	4,225,629	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Less AFUDC on Internal Cost	-1,014,379	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
EOM	221,978,510	221,978,510	222,406,010	222,406,010	222,406,010	222,833,510	222,833,510	222,833,510	223,261,010	223,261,010	223,261,010	223,688,510	223,688,510	223,688,510	223,704,610	223,704,610	223,704,610	223,720,710	
Return on CWIP																			
After Tax Return on Equity	17,429,592	0	0	887	1,773	1,773	2,660	3,547	3,547	4,434	5,320	6,207	7,094	7,094	7,127	7,160	7,160	7,194	
Income Tax Component	12,298,533	0	0	626	1,251	1,251	1,877	2,503	2,503	3,128	3,754	4,380	5,005	5,005	5,029	5,052	5,052	5,076	
Interest Expense Component	7,815,928	0	0	372	743	743	1,115	1,486	1,486	1,858	2,229	2,229	2,601	2,973	2,973	2,987	3,001	3,015	
Total Return on CWIP	37,544,053	0	0	1,884	3,768	3,768	5,652	7,536	7,536	9,420	11,304	11,304	13,188	15,072	15,072	15,143	15,213	15,284	

Minnesota Power  
BEC 4 Rider  
Plant Additions, AFUDC and Return on CWIP

Total Project	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22
<b>BEC 4 Ash Phase 3</b>	<b>2,160,560</b>																	
In Service 12/31/2023																		
BOM	1,742,200	1,742,200	1,742,200	1,758,300	1,758,300	1,758,300	1,774,400	1,774,400	1,774,400	1,845,680	1,845,680	1,845,680	1,916,960	1,916,960	1,916,960	1,988,240	1,988,240	1,988,240
CapEx	2,160,560	0	0	16,100	0	0	0	0	71,280	0	0	71,280	0	0	71,280	0	0	71,280
Less Internal Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Less AFUDC on Internal Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EOM	1,742,200	1,742,200	1,758,300	1,758,300	1,758,300	1,774,400	1,774,400	1,774,400	1,845,680	1,845,680	1,845,680	1,916,960	1,916,960	1,916,960	1,988,240	1,988,240	1,988,240	2,059,520
Return on CWIP																		
After Tax Return on Equity	7,227	7,227	7,261	7,294	7,294	7,327	7,361	7,361	7,509	7,657	7,657	7,804	7,952	7,952	8,100	8,248	8,248	8,396
Income Tax Component	5,100	5,100	5,123	5,147	5,147	5,170	5,194	5,194	5,298	5,403	5,403	5,507	5,611	5,611	5,715	5,820	5,820	5,924
Interest Expense Component	3,029	3,029	3,043	3,057	3,057	3,071	3,084	3,084	3,146	3,208	3,208	3,270	3,332	3,332	3,394	3,456	3,456	3,518
Total Return on CWIP	15,355	15,355	15,426	15,497	15,497	15,568	15,639	15,639	15,953	16,267	16,267	16,582	16,896	16,896	17,210	17,524	17,524	17,838
<b>BEC 4 Ash Phase 4</b>	<b>2,940,724</b>																	
In Service 12/31/2029																		
BOM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CapEx	2,940,724																	
Less Internal Cost	0																	
AFUDC	0																	
Less AFUDC on Internal Cost	0																	
EOM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Return on CWIP																		
After Tax Return on Equity																		
Income Tax Component																		
Interest Expense Component																		
Total Return on CWIP																		
<b>BEC 4 Ash Phase 5</b>	<b>3,178,613</b>																	
In Service 12/31/2035																		
BOM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CapEx	3,178,613																	
Less Internal Cost	0																	
AFUDC	0																	
Less AFUDC on Internal Cost	0																	
EOM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Return on CWIP																		
After Tax Return on Equity																		
Income Tax Component																		
Interest Expense Component																		
Total Return on CWIP																		
<b>Total</b>	<b>230,258,407</b>																	
BOM	223,720,710	223,720,710	223,720,710	223,736,810	223,736,810	223,736,810	223,752,910	223,752,910	223,752,910	223,824,190	223,824,190	223,824,190	223,895,470	223,895,470	223,895,470	223,966,750	223,966,750	223,966,750
CapEx	235,331,526	0	0	16,100	0	0	0	0	71,280	0	0	71,280	0	0	71,280	0	0	71,280
Less Internal Cost	-8,284,369	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC	4,225,629	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Less AFUDC on Internal Cost	-1,014,379	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EOM	223,720,710	223,720,710	223,736,810	223,736,810	223,736,810	223,752,910	223,752,910	223,752,910	223,824,190	223,824,190	223,824,190	223,895,470	223,895,470	223,895,470	223,966,750	223,966,750	223,966,750	224,038,030
Return on CWIP																		
After Tax Return on Equity	17,429,592	7,227	7,227	7,261	7,294	7,294	7,327	7,361	7,509	7,657	7,657	7,804	7,952	7,952	8,100	8,248	8,248	8,396
Income Tax Component	12,298,533	5,100	5,100	5,123	5,147	5,147	5,170	5,194	5,298	5,403	5,403	5,507	5,611	5,611	5,715	5,820	5,820	5,924
Interest Expense Component	7,815,928	3,029	3,029	3,043	3,057	3,057	3,071	3,084	3,084	3,146	3,208	3,208	3,270	3,332	3,332	3,394	3,456	3,456
Total Return on CWIP	37,544,053	15,355	15,355	15,426	15,497	15,497	15,568	15,639	15,639	15,953	16,267	16,267	16,582	16,896	16,896	17,210	17,524	17,524

Minnesota Power  
BEC 4 Rider  
Plant Additions, AFUDC and Return on CWIP

Total Project	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	
<b>BEC 4 Ash Phase 3</b>	<b>2,160,560</b>																		
In Service 12/31/2023																			
BOM		2,059,520	2,059,520	2,059,520	2,084,780	2,084,780	2,084,780	2,110,040	2,110,040	2,110,040	2,135,300	2,135,300	2,135,300						
CapEx	2,160,560	0	0	25,260	0	0	25,260	0	0	25,260	0	25,260	0	25,260					
Less Internal Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
Less AFUDC on Internal Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
EOM		2,059,520	2,059,520	2,084,780	2,084,780	2,084,780	2,110,040	2,110,040	2,110,040	2,135,300	2,135,300	2,135,300	2,160,560						
Return on CWIP																			
After Tax Return on Equity		8,544	8,544	8,596	8,648	8,648	8,701	8,753	8,753	8,806	8,858	8,858	4,429						
Income Tax Component		6,028	6,028	6,065	6,102	6,102	6,139	6,176	6,176	6,213	6,250	6,250	3,125						
Interest Expense Component		3,580	3,580	3,602	3,624	3,624	3,646	3,668	3,668	3,690	3,712	3,712	1,856						
Total Return on CWIP		18,152	18,152	18,263	18,375	18,375	18,486	18,597	18,597	18,709	18,820	18,820	9,410						
<b>BEC 4 Ash Phase 4</b>	<b>2,940,724</b>																		
In Service 12/31/2029																			
BOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	313,201	313,201	313,201	
CapEx	2,940,724															0	0	313,201	
Less Internal Cost	0															0	0	0	
AFUDC	0															0	0	0	
Less AFUDC on Internal Cost	0															0	0	0	
EOM		0	0	0	0	0	0	0	0	0	0	0	0	0	313,201	313,201	313,201	626,402	
Return on CWIP																			
After Tax Return on Equity														0	0	650	1,299	1,299	1,949
Income Tax Component														0	0	458	917	917	1,375
Interest Expense Component														0	0	272	544	544	817
Total Return on CWIP														0	0	1,380	2,760	2,760	4,141
<b>BEC 4 Ash Phase 5</b>	<b>3,178,613</b>																		
In Service 12/31/2035																			
BOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CapEx	3,178,613																		
Less Internal Cost	0																		
AFUDC	0																		
Less AFUDC on Internal Cost	0																		
EOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Return on CWIP																			
After Tax Return on Equity																			
Income Tax Component																			
Interest Expense Component																			
Total Return on CWIP																			
<b>Total</b>	<b>230,258,407</b>																		
BOM		224,038,030	224,038,030	224,038,030	224,063,290	224,063,290	224,063,290	224,088,550	224,088,550	224,088,550	224,113,810	224,113,810	224,113,810	224,139,070	224,139,070	224,139,070	224,452,271	224,452,271	224,452,271
CapEx	235,331,526	0	0	25,260	0	0	25,260	0	0	25,260	0	25,260	0	25,260	0	313,201	0	0	313,201
Less Internal Cost	-8,284,369	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC	4,225,629	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Less AFUDC on Internal Cost	-1,014,379	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EOM		224,038,030	224,038,030	224,063,290	224,063,290	224,063,290	224,088,550	224,088,550	224,088,550	224,113,810	224,113,810	224,113,810	224,139,070	224,139,070	224,139,070	224,452,271	224,452,271	224,452,271	224,765,472
Return on CWIP																			
After Tax Return on Equity	17,429,592	8,544	8,544	8,596	8,648	8,648	8,701	8,753	8,753	8,806	8,858	8,858	4,429	0	0	650	1,299	1,299	1,949
Income Tax Component	12,298,533	6,028	6,028	6,065	6,102	6,102	6,139	6,176	6,176	6,213	6,250	6,250	3,125	0	0	458	917	917	1,375
Interest Expense Component	7,815,928	3,580	3,580	3,602	3,624	3,624	3,646	3,668	3,668	3,690	3,712	3,712	1,856	0	0	272	544	544	817
Total Return on CWIP	37,544,053	18,152	18,152	18,263	18,375	18,375	18,486	18,597	18,597	18,709	18,820	18,820	9,410	0	0	1,380	2,760	2,760	4,141





Minnesota Power  
BEC 4 Rider  
Plant Additions, AFUDC and Return on CWIP

Total Project	Jan-26	Feb-26	Mar-26	Apr-26	May-26	Jun-26	Jul-26	Aug-26	Sep-26	Oct-26	Nov-26	Dec-26	Jan-27	Feb-27	Mar-27	Apr-27	May-27	Jun-27	
<b>BEC 4 Ash Phase 3</b>	<b>2,160,560</b>																		
In Service 12/31/2023																			
BOM																			
CapEx	2,160,560																		
Less Internal Cost	0																		
AFUDC	0																		
Less AFUDC on Internal Cost	0																		
EOM																			
Return on CWIP																			
After Tax Return on Equity																			
Income Tax Component																			
Interest Expense Component																			
Total Return on CWIP																			
<b>BEC 4 Ash Phase 4</b>	<b>2,940,724</b>																		
In Service 12/31/2029																			
BOM	1,252,804	1,252,804	1,252,804	1,311,784	1,311,784	1,311,784	1,370,764	1,370,764	1,370,764	1,429,744	1,429,744	1,429,744	1,488,724	1,488,724	1,488,724	1,514,224	1,514,224	1,514,224	
CapEx	2,940,724	0	0	58,980	0	0	58,980	0	0	58,980	0	0	58,980	0	0	25,500	0	0	25,500
Less Internal Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Less AFUDC on Internal Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EOM	1,252,804	1,252,804	1,311,784	1,311,784	1,311,784	1,370,764	1,370,764	1,370,764	1,429,744	1,429,744	1,429,744	1,488,724	1,488,724	1,488,724	1,514,224	1,514,224	1,514,224	1,539,724	
Return on CWIP																			
After Tax Return on Equity	5,197	5,197	5,319	5,442	5,442	5,564	5,686	5,686	5,809	5,931	5,931	6,053	6,176	6,176	6,229	6,282	6,282	6,334	
Income Tax Component	3,667	3,667	3,753	3,840	3,840	3,926	4,012	4,012	4,099	4,185	4,185	4,271	4,358	4,358	4,395	4,432	4,432	4,470	
Interest Expense Component	2,178	2,178	2,229	2,280	2,280	2,332	2,383	2,383	2,434	2,485	2,485	2,537	2,588	2,588	2,610	2,632	2,632	2,654	
Total Return on CWIP	11,042	11,042	11,302	11,562	11,562	11,822	12,082	12,082	12,342	12,601	12,601	12,861	13,121	13,121	13,234	13,346	13,346	13,458	
<b>BEC 4 Ash Phase 5</b>	<b>3,178,613</b>																		
In Service 12/31/2035																			
BOM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CapEx	3,178,613																		
Less Internal Cost	0																		
AFUDC	0																		
Less AFUDC on Internal Cost	0																		
EOM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Return on CWIP																			
After Tax Return on Equity																			
Income Tax Component																			
Interest Expense Component																			
Total Return on CWIP																			
<b>Total</b>	<b>230,258,407</b>																		
BOM	225,391,874	225,391,874	225,391,874	225,450,854	225,450,854	225,450,854	225,509,834	225,509,834	225,509,834	225,568,814	225,568,814	225,568,814	225,627,794	225,627,794	225,627,794	225,653,294	225,653,294	225,653,294	
CapEx	235,331,526	0	0	58,980	0	0	58,980	0	0	58,980	0	0	58,980	0	0	25,500	0	0	25,500
Less Internal Cost	-8,284,369	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC	4,225,629	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Less AFUDC on Internal Cost	-1,014,379	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EOM	225,391,874	225,391,874	225,450,854	225,450,854	225,450,854	225,509,834	225,509,834	225,509,834	225,568,814	225,568,814	225,568,814	225,627,794	225,627,794	225,627,794	225,653,294	225,653,294	225,653,294	225,678,794	
Return on CWIP																			
After Tax Return on Equity	17,429,592	5,197	5,197	5,319	5,442	5,442	5,564	5,686	5,686	5,809	5,931	5,931	6,053	6,176	6,176	6,229	6,282	6,282	6,334
Income Tax Component	12,298,533	3,667	3,667	3,753	3,840	3,840	3,926	4,012	4,012	4,099	4,185	4,185	4,271	4,358	4,358	4,395	4,432	4,432	4,470
Interest Expense Component	7,815,928	2,178	2,178	2,229	2,280	2,280	2,332	2,383	2,383	2,434	2,485	2,485	2,537	2,588	2,588	2,610	2,632	2,632	2,654
Total Return on CWIP	37,544,053	11,042	11,042	11,302	11,562	11,562	11,822	12,082	12,082	12,342	12,601	12,601	12,861	13,121	13,121	13,234	13,346	13,346	13,458

Minnesota Power  
BEC 4 Rider  
Plant Additions, AFUDC and Return on CWIP

Total Project	Jul-27	Aug-27	Sep-27	Oct-27	Nov-27	Dec-27	Jan-28	Feb-28	Mar-28	Apr-28	May-28	Jun-28	Jul-28	Aug-28	Sep-28	Oct-28	Nov-28	Dec-28	
<b>BEC 4 Ash Phase 3</b>	<b>2,160,560</b>																		
In Service 12/31/2023																			
BOM																			
CapEx	2,160,560																		
Less Internal Cost	0																		
AFUDC	0																		
Less AFUDC on Internal Cost	0																		
EOM																			
Return on CWIP																			
After Tax Return on Equity																			
Income Tax Component																			
Interest Expense Component																			
Total Return on CWIP																			
<b>BEC 4 Ash Phase 4</b>	<b>2,940,724</b>																		
In Service 12/31/2029																			
BOM	1,539,724	1,539,724	1,539,724	1,565,224	1,565,224	1,565,224	1,590,724	1,590,724	1,590,724	1,928,224	1,928,224	1,928,224	2,265,724	2,265,724	2,265,724	2,603,224	2,603,224	2,603,224	
CapEx	2,940,724	0	0	25,500	0	0	25,500	0	0	337,500	0	0	337,500	0	0	337,500	0	0	337,500
Less Internal Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Less AFUDC on Internal Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EOM	1,539,724	1,539,724	1,565,224	1,565,224	1,565,224	1,590,724	1,590,724	1,590,724	1,928,224	1,928,224	1,928,224	2,265,724	2,265,724	2,265,724	2,603,224	2,603,224	2,603,224	2,940,724	
Return on CWIP																			
After Tax Return on Equity	6,387	6,387	6,440	6,493	6,493	6,546	6,599	6,599	7,299	7,999	7,999	8,699	9,399	9,399	10,099	10,799	10,799	11,499	
Income Tax Component	4,507	4,507	4,544	4,582	4,582	4,619	4,656	4,656	5,150	5,644	5,644	6,138	6,632	6,632	7,126	7,620	7,620	8,114	
Interest Expense Component	2,677	2,677	2,699	2,721	2,721	2,743	2,765	2,765	3,059	3,352	3,352	3,645	3,939	3,939	4,232	4,525	4,525	4,819	
Total Return on CWIP	13,571	13,571	13,683	13,796	13,796	13,908	14,020	14,020	15,508	16,995	16,995	18,482	19,970	19,970	21,457	22,944	22,944	24,432	
<b>BEC 4 Ash Phase 5</b>	<b>3,178,613</b>																		
In Service 12/31/2035																			
BOM																			
CapEx	3,178,613																		
Less Internal Cost	0																		
AFUDC	0																		
Less AFUDC on Internal Cost	0																		
EOM																			
Return on CWIP																			
After Tax Return on Equity																			
Income Tax Component																			
Interest Expense Component																			
Total Return on CWIP																			
<b>Total</b>	<b>230,258,407</b>																		
BOM	225,678,794	225,678,794	225,678,794	225,704,294	225,704,294	225,704,294	225,729,794	225,729,794	225,729,794	226,067,294	226,067,294	226,067,294	226,404,794	226,404,794	226,404,794	226,742,294	226,742,294	226,742,294	
CapEx	235,331,526	0	0	25,500	0	0	25,500	0	0	337,500	0	0	337,500	0	0	337,500	0	0	337,500
Less Internal Cost	-8,284,369	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC	4,225,629	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Less AFUDC on Internal Cost	-1,014,379	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EOM	225,678,794	225,678,794	225,704,294	225,704,294	225,704,294	225,729,794	225,729,794	225,729,794	226,067,294	226,067,294	226,067,294	226,404,794	226,404,794	226,404,794	226,742,294	226,742,294	226,742,294	227,079,794	
Return on CWIP																			
After Tax Return on Equity	17,429,592	6,387	6,387	6,440	6,493	6,493	6,546	6,599	6,599	7,299	7,999	7,999	8,699	9,399	9,399	10,099	10,799	10,799	11,499
Income Tax Component	12,298,533	4,507	4,507	4,544	4,582	4,582	4,619	4,656	4,656	5,150	5,644	5,644	6,138	6,632	6,632	7,126	7,620	7,620	8,114
Interest Expense Component	7,815,928	2,677	2,677	2,699	2,721	2,721	2,743	2,765	2,765	3,059	3,352	3,352	3,645	3,939	3,939	4,232	4,525	4,525	4,819
Total Return on CWIP	37,544,053	13,571	13,571	13,683	13,796	13,796	13,908	14,020	14,020	15,508	16,995	16,995	18,482	19,970	19,970	21,457	22,944	22,944	24,432

Minnesota Power  
BEC 4 Rider  
Plant Additions, AFUDC and Return on CWIP

Total Project	Jan-29	Feb-29	Mar-29	Apr-29	May-29	Jun-29	Jul-29	Aug-29	Sep-29	Oct-29	Nov-29	Dec-29	Jan-30	Feb-30	Mar-30	Apr-30	May-30	
<b>BEC 4 Ash Phase 3</b>	<b>2,160,560</b>																	
In Service 12/31/2023																		
BOM																		
CapEx	2,160,560																	
Less Internal Cost	0																	
AFUDC	0																	
Less AFUDC on Internal Cost	0																	
EOM																		
Return on CWIP																		
After Tax Return on Equity																		
Income Tax Component																		
Interest Expense Component																		
Total Return on CWIP																		
<b>BEC 4 Ash Phase 4</b>	<b>2,940,724</b>													<b>In-Service</b>				
In Service 12/31/2029																		
BOM	2,940,724	2,940,724	2,940,724	2,940,724	2,940,724	2,940,724	2,940,724	2,940,724	2,940,724	2,940,724	2,940,724	2,940,724	2,940,724	2,940,724				
CapEx	2,940,724	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Less Internal Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Less AFUDC on Internal Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
EOM	2,940,724	2,940,724	2,940,724	2,940,724	2,940,724	2,940,724	2,940,724	2,940,724	2,940,724	2,940,724	2,940,724	2,940,724	2,940,724	2,940,724				
Return on CWIP																		
After Tax Return on Equity	12,199	12,199	12,199	12,199	12,199	12,199	12,199	12,199	12,199	12,199	12,199	12,199	12,199	6,100				
Income Tax Component	8,608	8,608	8,608	8,608	8,608	8,608	8,608	8,608	8,608	8,608	8,608	8,608	8,608	4,304				
Interest Expense Component	5,112	5,112	5,112	5,112	5,112	5,112	5,112	5,112	5,112	5,112	5,112	5,112	5,112	2,556				
Total Return on CWIP	25,919	25,919	25,919	25,919	25,919	25,919	25,919	25,919	25,919	25,919	25,919	25,919	25,919	12,959				
<b>BEC 4 Ash Phase 5</b>	<b>3,178,613</b>																	
In Service 12/31/2035																		
BOM																		
CapEx	3,178,613																	
Less Internal Cost	0																	
AFUDC	0																	
Less AFUDC on Internal Cost	0																	
EOM																		
Return on CWIP																		
After Tax Return on Equity														0	0	1	2	2
Income Tax Component														0	0	1	2	2
Interest Expense Component														0	0	0	1	1
Total Return on CWIP														0	0	2	5	5
<b>Total</b>	<b>230,258,407</b>																	
BOM	227,079,794	227,079,794	227,079,794	227,079,794	227,079,794	227,079,794	227,079,794	227,079,794	227,079,794	227,079,794	227,079,794	227,079,794	227,079,794	227,079,794	227,079,794	227,080,354	227,080,354	
CapEx	235,331,526	0	0	0	0	0	0	0	0	0	0	0	0	0	0	560	0	
Less Internal Cost	-8,284,369	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
AFUDC	4,225,629	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Less AFUDC on Internal Cost	-1,014,379	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
EOM	227,079,794	227,079,794	227,079,794	227,079,794	227,079,794	227,079,794	227,079,794	227,079,794	227,079,794	227,079,794	227,079,794	227,079,794	227,079,794	227,079,794	227,080,354	227,080,354	227,080,354	
Return on CWIP																		
After Tax Return on Equity	17,429,592	12,199	12,199	12,199	12,199	12,199	12,199	12,199	12,199	12,199	12,199	12,199	6,100	0	0	1	2	
Income Tax Component	12,298,533	8,608	8,608	8,608	8,608	8,608	8,608	8,608	8,608	8,608	8,608	8,608	4,304	0	0	1	2	
Interest Expense Component	7,815,928	5,112	5,112	5,112	5,112	5,112	5,112	5,112	5,112	5,112	5,112	5,112	2,556	0	0	0	1	
Total Return on CWIP	37,544,053	25,919	25,919	25,919	25,919	25,919	25,919	25,919	25,919	25,919	25,919	25,919	12,959	0	0	2	5	

Minnesota Power  
BEC 4 Rider  
Plant Additions, AFUDC and Return on CWIP

Total Project	Jun-30	Jul-30	Aug-30	Sep-30	Oct-30	Nov-30	Dec-30	Jan-31	Feb-31	Mar-31	Apr-31	May-31	Jun-31	Jul-31	Aug-31	Sep-31	Oct-31	
<b>BEC 4 Ash Phase 3</b>	<b>2,160,560</b>																	
In Service 12/31/2023																		
BOM																		
CapEx	2,160,560																	
Less Internal Cost	0																	
AFUDC	0																	
Less AFUDC on Internal Cost	0																	
EOM																		
Return on CWIP																		
After Tax Return on Equity																		
Income Tax Component																		
Interest Expense Component																		
Total Return on CWIP																		
<b>BEC 4 Ash Phase 4</b>	<b>2,940,724</b>																	
In Service 12/31/2029																		
BOM																		
CapEx	2,940,724																	
Less Internal Cost	0																	
AFUDC	0																	
Less AFUDC on Internal Cost	0																	
EOM																		
Return on CWIP																		
After Tax Return on Equity																		
Income Tax Component																		
Interest Expense Component																		
Total Return on CWIP																		
<b>BEC 4 Ash Phase 5</b>	<b>3,178,613</b>																	
In Service 12/31/2035																		
BOM	560	1,120	1,120	1,120	1,680	1,680	1,680	2,240	2,240	2,240	175,184	175,184	175,184	348,128	348,128	348,128	521,072	
CapEx	3,178,613	560	0	0	560	0	0	560	0	0	172,944	0	0	172,944	0	0	172,944	0
Less Internal Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Less AFUDC on Internal Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EOM	1,120	1,120	1,120	1,680	1,680	1,680	2,240	2,240	2,240	175,184	175,184	175,184	348,128	348,128	348,128	521,072	521,072	
Return on CWIP																		
After Tax Return on Equity	3	5	5	6	7	7	8	9	9	368	727	727	1,085	1,444	1,444	1,803	2,162	
Income Tax Component	2	3	3	4	5	5	6	7	7	260	513	513	766	1,019	1,019	1,272	1,525	
Interest Expense Component	1	2	2	2	3	3	3	4	4	154	305	305	455	605	605	755	906	
Total Return on CWIP	7	10	10	12	15	15	17	20	20	782	1,544	1,544	2,306	3,068	3,068	3,830	4,593	
<b>Total</b>	<b>230,258,407</b>																	
BOM	227,080,354	227,080,914	227,080,914	227,080,914	227,081,474	227,081,474	227,081,474	227,082,034	227,082,034	227,082,034	227,254,978	227,254,978	227,254,978	227,427,922	227,427,922	227,427,922	227,600,866	
CapEx	235,331,526	560	0	0	560	0	0	560	0	0	172,944	0	0	172,944	0	0	172,944	0
Less Internal Cost	-8,284,369	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC	4,225,629	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Less AFUDC on Internal Cost	-1,014,379	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EOM	227,080,914	227,080,914	227,080,914	227,081,474	227,081,474	227,081,474	227,082,034	227,082,034	227,082,034	227,254,978	227,254,978	227,254,978	227,427,922	227,427,922	227,427,922	227,600,866	227,600,866	
Return on CWIP																		
After Tax Return on Equity	17,429,592	3	5	5	6	7	7	8	9	9	368	727	727	1,085	1,444	1,444	1,803	2,162
Income Tax Component	12,298,533	2	3	3	4	5	5	6	7	7	260	513	513	766	1,019	1,019	1,272	1,525
Interest Expense Component	7,815,928	1	2	2	2	3	3	3	4	4	154	305	305	455	605	605	755	906
Total Return on CWIP	37,544,053	7	10	10	12	15	15	17	20	20	782	1,544	1,544	2,306	3,068	3,068	3,830	4,593

Minnesota Power  
BEC 4 Rider  
Plant Additions, AFUDC and Return on CWIP

Total Project	Nov-31	Dec-31	Jan-32	Feb-32	Mar-32	Apr-32	May-32	Jun-32	Jul-32	Aug-32	Sep-32	Oct-32	Nov-32	Dec-32	Jan-33	Feb-33	Mar-33
<b>BEC 4 Ash Phase 3</b>	<b>2,160,560</b>																
In Service 12/31/2023																	
BOM																	
CapEx	2,160,560																
Less Internal Cost	0																
AFUDC	0																
Less AFUDC on Internal Cost	0																
EOM																	
Return on CWIP																	
After Tax Return on Equity																	
Income Tax Component																	
Interest Expense Component																	
Total Return on CWIP																	
<b>BEC 4 Ash Phase 4</b>	<b>2,940,724</b>																
In Service 12/31/2029																	
BOM																	
CapEx	2,940,724																
Less Internal Cost	0																
AFUDC	0																
Less AFUDC on Internal Cost	0																
EOM																	
Return on CWIP																	
After Tax Return on Equity																	
Income Tax Component																	
Interest Expense Component																	
Total Return on CWIP																	
<b>BEC 4 Ash Phase 5</b>	<b>3,178,613</b>																
In Service 12/31/2035																	
BOM	521,072	521,072	694,016	694,016	694,016	1,064,816	1,064,816	1,064,816	1,435,616	1,435,616	1,435,616	1,806,416	1,806,416	1,806,416	2,177,216	2,177,216	2,177,216
CapEx	3,178,613	0	172,944	0	0	370,800	0	0	370,800	0	0	370,800	0	0	370,800	0	0
Less Internal Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Less AFUDC on Internal Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EOM	521,072	694,016	694,016	694,016	1,064,816	1,064,816	1,064,816	1,435,616	1,435,616	1,435,616	1,806,416	1,806,416	1,806,416	2,177,216	2,177,216	2,177,216	2,177,216
Return on CWIP																	
After Tax Return on Equity	2,162	2,520	2,879	2,879	3,648	4,417	4,417	5,186	5,955	5,955	6,725	7,494	7,494	8,263	9,032	9,032	9,032
Income Tax Component	1,525	1,778	2,031	2,031	2,574	3,117	3,117	3,660	4,202	4,202	4,745	5,288	5,288	5,830	6,373	6,373	6,373
Interest Expense Component	906	1,056	1,206	1,206	1,529	1,851	1,851	2,173	2,496	2,496	2,818	3,140	3,140	3,462	3,785	3,785	3,785
Total Return on CWIP	4,593	5,355	6,117	6,117	7,751	9,385	9,385	11,019	12,653	12,653	14,287	15,921	15,921	17,555	19,189	19,189	19,189
<b>Total</b>	<b>230,258,407</b>																
BOM	227,600,866	227,600,866	227,773,810	227,773,810	227,773,810	228,144,610	228,144,610	228,144,610	228,515,410	228,515,410	228,515,410	228,886,210	228,886,210	228,886,210	229,257,010	229,257,010	229,257,010
CapEx	235,331,526	0	172,944	0	0	370,800	0	0	370,800	0	0	370,800	0	0	370,800	0	0
Less Internal Cost	-8,284,369	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC	4,225,629	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Less AFUDC on Internal Cost	-1,014,379	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EOM	227,600,866	227,773,810	227,773,810	227,773,810	228,144,610	228,144,610	228,144,610	228,515,410	228,515,410	228,515,410	228,886,210	228,886,210	228,886,210	229,257,010	229,257,010	229,257,010	229,257,010
Return on CWIP																	
After Tax Return on Equity	17,429,592	2,162	2,520	2,879	2,879	3,648	4,417	4,417	5,186	5,955	5,955	6,725	7,494	7,494	8,263	9,032	9,032
Income Tax Component	12,298,533	1,525	1,778	2,031	2,031	2,574	3,117	3,117	3,660	4,202	4,202	4,745	5,288	5,288	5,830	6,373	6,373
Interest Expense Component	7,815,928	906	1,056	1,206	1,206	1,529	1,851	1,851	2,173	2,496	2,496	2,818	3,140	3,140	3,462	3,785	3,785
Total Return on CWIP	37,544,053	4,593	5,355	6,117	6,117	7,751	9,385	9,385	11,019	12,653	12,653	14,287	15,921	15,921	17,555	19,189	19,189

Minnesota Power  
 BEC 4 Rider  
 Plant Additions, AFUDC and Return on CWIP

Total Project	Apr-33	May-33	Jun-33	Jul-33	Aug-33	Sep-33	Oct-33	Nov-33	Dec-33	Jan-34	Feb-34	Mar-34	Apr-34	May-34	Jun-34	Jul-34	Aug-34
<b>BEC 4 Ash Phase 3</b>	<b>2,160,560</b>																
In Service 12/31/2023																	
BOM																	
CapEx	2,160,560																
Less Internal Cost	0																
AFUDC	0																
Less AFUDC on Internal Cost	0																
EOM																	
Return on CWIP																	
After Tax Return on Equity																	
Income Tax Component																	
Interest Expense Component																	
Total Return on CWIP																	
<b>BEC 4 Ash Phase 4</b>	<b>2,940,724</b>																
In Service 12/31/2029																	
BOM																	
CapEx	2,940,724																
Less Internal Cost	0																
AFUDC	0																
Less AFUDC on Internal Cost	0																
EOM																	
Return on CWIP																	
After Tax Return on Equity																	
Income Tax Component																	
Interest Expense Component																	
Total Return on CWIP																	
<b>BEC 4 Ash Phase 5</b>	<b>3,178,613</b>																
In Service 12/31/2035																	
BOM	2,177,216	2,177,216	2,177,216	2,177,216	2,177,216	2,177,216	2,177,216	2,177,216	2,177,216	2,177,216	2,177,216	2,177,216	2,177,776	2,177,776	2,177,776	2,178,336	2,178,336
CapEx	3,178,613	0	0	0	0	0	0	0	0	0	0	0	560	0	0	560	0
Less Internal Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Less AFUDC on Internal Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EOM	2,177,216	2,177,216	2,177,216	2,177,216	2,177,216	2,177,216	2,177,216	2,177,216	2,177,216	2,177,216	2,177,216	2,177,776	2,177,776	2,177,776	2,178,336	2,178,336	2,178,336
Return on CWIP																	
After Tax Return on Equity	9,032	9,032	9,032	9,032	9,032	9,032	9,032	9,032	9,032	9,032	9,032	9,032	9,033	9,034	9,034	9,035	9,036
Income Tax Component	6,373	6,373	6,373	6,373	6,373	6,373	6,373	6,373	6,373	6,373	6,373	6,373	6,374	6,375	6,375	6,375	6,376
Interest Expense Component	3,785	3,785	3,785	3,785	3,785	3,785	3,785	3,785	3,785	3,785	3,785	3,785	3,786	3,786	3,786	3,787	3,787
Total Return on CWIP	19,189	19,189	19,189	19,189	19,189	19,189	19,189	19,189	19,189	19,189	19,189	19,189	19,192	19,194	19,194	19,197	19,199
<b>Total</b>	<b>230,258,407</b>																
BOM	229,257,010	229,257,010	229,257,010	229,257,010	229,257,010	229,257,010	229,257,010	229,257,010	229,257,010	229,257,010	229,257,010	229,257,010	229,257,570	229,257,570	229,257,570	229,258,130	229,258,130
CapEx	235,331,526	0	0	0	0	0	0	0	0	0	0	0	560	0	0	560	0
Less Internal Cost	-8,284,369	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC	4,225,629	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Less AFUDC on Internal Cost	-1,014,379	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EOM	229,257,010	229,257,010	229,257,010	229,257,010	229,257,010	229,257,010	229,257,010	229,257,010	229,257,010	229,257,010	229,257,010	229,257,570	229,257,570	229,257,570	229,258,130	229,258,130	229,258,130
Return on CWIP																	
After Tax Return on Equity	17,429,592	9,032	9,032	9,032	9,032	9,032	9,032	9,032	9,032	9,032	9,032	9,032	9,033	9,034	9,034	9,035	9,036
Income Tax Component	12,298,533	6,373	6,373	6,373	6,373	6,373	6,373	6,373	6,373	6,373	6,373	6,373	6,374	6,375	6,375	6,375	6,376
Interest Expense Component	7,815,928	3,785	3,785	3,785	3,785	3,785	3,785	3,785	3,785	3,785	3,785	3,785	3,786	3,786	3,786	3,787	3,787
Total Return on CWIP	37,544,053	19,189	19,189	19,189	19,189	19,189	19,189	19,189	19,189	19,189	19,189	19,189	19,192	19,194	19,194	19,197	19,199

Minnesota Power  
BEC 4 Rider  
Plant Additions, AFUDC and Return on CWIP

Total Project	Sep-34	Oct-34	Nov-34	Dec-34	Jan-35	Feb-35	Mar-35	Apr-35	May-35	Jun-35	Jul-35	Aug-35	Sep-35	Oct-35	Nov-35	Dec-35	
<b>BEC 4 Ash Phase 3</b>	<b>2,160,560</b>																
In Service 12/31/2023																	
BOM																	
CapEx	2,160,560																
Less Internal Cost	0																
AFUDC	0																
Less AFUDC on Internal Cost	0																
EOM																	
Return on CWIP																	
After Tax Return on Equity																	
Income Tax Component																	
Interest Expense Component																	
Total Return on CWIP																	
<b>BEC 4 Ash Phase 4</b>	<b>2,940,724</b>																
In Service 12/31/2029																	
BOM																	
CapEx	2,940,724																
Less Internal Cost	0																
AFUDC	0																
Less AFUDC on Internal Cost	0																
EOM																	
Return on CWIP																	
After Tax Return on Equity																	
Income Tax Component																	
Interest Expense Component																	
Total Return on CWIP																	
<b>BEC 4 Ash Phase 5</b>	<b>3,178,613</b>																
In Service 12/31/2035																	
BOM	2,178,336	2,178,896	2,178,896	2,178,896	2,179,456	2,179,456	2,179,456	2,429,245	2,429,245	2,429,245	2,679,034	2,679,034	2,679,034	2,928,822	2,928,822	2,928,822	
CapEx	3,178,613	560	0	0	560	0	0	249,789	0	0	249,789	0	0	249,789	0	0	249,790
Less Internal Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Less AFUDC on Internal Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EOM	2,178,896	2,178,896	2,178,896	2,179,456	2,179,456	2,179,456	2,429,245	2,429,245	2,429,245	2,679,034	2,679,034	2,679,034	2,928,822	2,928,822	2,928,822	3,178,613	
Return on CWIP																	
After Tax Return on Equity	9,038	9,039	9,039	9,040	9,041	9,041	9,559	10,077	10,077	10,595	11,114	11,114	11,632	12,150	12,150	6,075	
Income Tax Component	6,377	6,378	6,378	6,379	6,380	6,380	6,745	7,111	7,111	7,476	7,842	7,842	8,207	8,573	8,573	4,286	
Interest Expense Component	3,787	3,788	3,788	3,788	3,789	3,789	4,006	4,223	4,223	4,440	4,657	4,657	4,874	5,091	5,091	2,546	
Total Return on CWIP	19,202	19,204	19,204	19,207	19,209	19,209	20,310	21,411	21,411	22,512	23,612	23,612	24,713	25,814	25,814	12,907	
<b>Total</b>	<b>230,258,407</b>																
BOM	229,258,130	229,258,690	229,258,690	229,258,690	229,259,250	229,259,250	229,259,250	229,509,039	229,509,039	229,509,039	229,758,828	229,758,828	229,758,828	230,008,617	230,008,617	230,008,617	
CapEx	235,331,526	560	0	0	560	0	0	249,789	0	0	249,789	0	0	249,789	0	0	249,790
Less Internal Cost	-8,284,369	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC	4,225,629	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Less AFUDC on Internal Cost	-1,014,379	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EOM	229,258,690	229,258,690	229,258,690	229,259,250	229,259,250	229,259,250	229,509,039	229,509,039	229,509,039	229,758,828	229,758,828	229,758,828	230,008,617	230,008,617	230,008,617	230,258,407	
Return on CWIP																	
After Tax Return on Equity	17,429,592	9,038	9,039	9,039	9,040	9,041	9,559	10,077	10,077	10,595	11,114	11,114	11,632	12,150	12,150	6,075	
Income Tax Component	12,298,533	6,377	6,378	6,378	6,379	6,380	6,380	6,745	7,111	7,111	7,476	7,842	8,207	8,573	8,573	4,286	
Interest Expense Component	7,815,928	3,787	3,788	3,788	3,788	3,789	3,789	4,006	4,223	4,223	4,440	4,657	4,657	4,874	5,091	2,546	
Total Return on CWIP	37,544,053	19,202	19,204	19,204	19,207	19,209	19,209	20,310	21,411	21,411	22,512	23,612	23,612	24,713	25,814	12,907	

Minnesota Power  
BEC4 Rider  
Plant Additions, AFUDC and Return on CWIP for Basin's Share

	Total Project	to date Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14
<b>BEC 4 Environmental Retrofit In Service 12/31/2015</b>	<b>223,427,863</b>														
BOM		0	22,080,404	24,650,462	27,389,835	31,514,963	34,759,576	36,011,448	38,344,703	42,437,297	46,108,367	50,684,738	55,419,850	61,190,666	63,015,477
CapEx	219,220,355	20,189,572	2,439,150	2,594,454	3,961,992	3,061,934	1,052,045	2,124,604	3,867,255	3,425,444	4,561,805	4,719,711	5,753,924	1,807,357	6,752,543
Less Internal Cost 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC	4,207,508	1,890,832	130,908	144,919	163,136	182,679	199,828	208,650	225,340	245,626	14,567	15,400	16,892	17,454	18,124
EOM		22,080,404	24,650,462	27,389,835	31,514,963	34,759,576	36,011,448	38,344,703	42,437,297	46,108,367	50,684,738	55,419,850	61,190,666	63,015,477	69,786,144
Basin's Return on CWIP															
<b>BEC 4 Storm Water In Service 11/1/2016</b>	<b>3,951,327</b>														
BOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0
CapEx	3,940,234	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Less Internal Cost 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC	11,093	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Basin's Return on CWIP															
<b>BEC 4 Ash Haul Improve In Service 8/31/2016</b>	<b>2,103,245</b>														
BOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0
CapEx	2,098,287														
Less Internal Cost 1/	0														
AFUDC	4,958														
EOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Basin's Return on CWIP															
<b>BEC 4 Ash Phase 1 In Service 12/31/2019</b>	<b>1,734,158</b>														
BOM		0	0	423	426	428	430	3,708	3,728	4,086	4,108	4,669	8,105	15,099	15,099
CapEx	1,731,953	0	422	0	0	0	3,266	0	336	0	560	3,436	6,994	0	0
Less Internal Cost 1/	135	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC	2,070	0	1	2	2	2	11	20	21	22	0	0	0	0	0
EOM		0	423	426	428	430	3,708	3,728	4,086	4,108	4,669	8,105	15,099	15,099	15,100
Basin's Return on CWIP															
<b>BEC 4 Ash Phase 2 In Service 12/31/2019</b>	<b>60,800</b>														
BOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0
CapEx	60,800	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Less Internal Cost 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EOM		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Basin's Return on CWIP		0	0	0	0	0	0	0	0	0	0	0	0	0	0

Notes:

1/ Internal costs and AFUC on internal costs are not excluded for Basin calculations.











Minnesota Power  
BEC4 Rider  
Plant Additions, AFUDC and Return on CWIP for Basin's Share

	Total Project	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19
BEC 4 Environmental Retrofit In Service 12/31/2015	<b>223,427,863</b>														
BOM															
CapEx	219,220,355														
Less Internal Cost 1/	0														
AFUDC	4,207,508														
EOM															
Basin's Return on CWIP															
BEC 4 Storm Water In Service 11/1/2016	<b>3,951,327</b>														
BOM															
CapEx	3,940,234														
Less Internal Cost 1/	0														
AFUDC	11,093														
EOM															
Basin's Return on CWIP															
BEC 4 Ash Haul Improve In Service 8/31/2016	<b>2,103,245</b>														
BOM															
CapEx	2,098,287														
Less Internal Cost 1/	0														
AFUDC	4,958														
EOM															
Basin's Return on CWIP															
BEC 4 Ash Phase 1 In Service 12/31/2019	<b>1,734,158</b>														<u>In-Service</u>
BOM		1,734,088	1,734,093	1,734,098	1,734,103	1,734,108	1,734,113	1,734,118	1,734,123	1,734,128	1,734,133	1,734,138	1,734,143	1,734,148	1,734,153
CapEx	1,731,953	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Less Internal Cost 1/	135	5	5	5	5	5	5	5	5	5	5	5	5	5	5
AFUDC	2,070	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EOM		1,734,093	1,734,098	1,734,103	1,734,108	1,734,113	1,734,118	1,734,123	1,734,128	1,734,133	1,734,138	1,734,143	1,734,148	1,734,153	1,734,158
Basin's Return on CWIP		3,403	2,857	2,857	2,857	2,857	2,857	2,857	2,857	2,857	2,857	2,857	2,857	2,857	1,428
BEC 4 Ash Phase 2 In Service 12/31/2019	<b>60,800</b>														<u>In-Service</u>
BOM		0	0	0	0	0	15,200	15,200	15,200	30,400	30,400	30,400	45,600	45,600	45,600
CapEx	60,800	0	0	0	0	15,200	0	0	15,200	0	0	15,200	0	0	15,200
Less Internal Cost 1/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EOM		0	0	0	0	15,200	15,200	15,200	30,400	30,400	30,400	45,600	45,600	45,600	60,800
Basin's Return on CWIP		0	0	0	0	13	25	25	38	50	50	63	75	75	38

MPUC Docket E015/GR-09-1151  
Rate of Return / Cost of Capital Summary  
(thousands of dollars)  
Commission Decision (9/29/2010)

Average for 13 months Ended 12/31/10						
	Amount	% of Total	Component Cost	Weighted Cost	Pre-tax Rate	After-Tax Rate
Long Term Debt	\$ 696,677	45.71%	5.56%	2.540%	2.540%	1.490%
Common Equity	\$ 827,534	54.29%	10.38%	5.640%	9.610%	5.640%
	<u>\$ 1,524,211</u>	<u>100.00%</u>		<u>8.180%</u>	<u>12.150%</u>	<u>7.130%</u>
Federal & State Income Tax Rate						41.37%
Pretax "Gross-up" Factor						1.70560
After Tax Return on Equity						5.6343% 1/
Income Tax Component						3.9757% 2/
Interest Expense Component						2.5400%
Pre-tax Return						<u>12.1500%</u>

1/ Rounding forced to equity.

2/ Shown here as a component of the pretax rate of return. Can also be computed as 70.56% gross up on After Tax Return on Equity.

MPUC Docket E015/GR-16-664  
2017 Test Year Rate of Return / Cost of Capital Summary  
(thousands of dollars)  
Commission Decision (1/18/2018) 3/  
Used Starting 12/1/2018 coincident with implementation of Final Rates

Average for 13 months Ended 12/31/17						
	Amount	% of Total	Component Cost	Weighted Cost	Pre-tax Rate	After-Tax Rate
Long Term Debt	\$ 1,229	46.189%	4.5170%	2.0860%	2.0860%	1.220%
Common Equity	\$ 1,431	53.811%	9.2500%	4.9780%	8.4905%	4.978%
	<u>\$ 2,660</u>	<u>100.00%</u>		<u>7.0640%</u>	<u>10.5765%</u>	<u>6.198%</u>
Federal & State Income Tax Rate						41.37%
Pretax "Gross-up" Factor						1.70560
After Tax Return on Equity						4.9780% 1/
Income Tax Component						3.5125% 2/
Interest Expense Component						2.0860%
Pre-tax Return						<u>10.5765%</u>

1/ Rounding forced to equity.

2/ Shown here as a component of the pretax rate of return. Can also be computed as 70.56% gross up on After Tax Return on Equity.

3/ MPUC Decision Options 2012, 2015 and 9.25% ROE motion by Sieben.

Minnesota Power  
BEC 4 Environmental Rider: 2018 Factor Filing  
Revised Allocation Factors for Use Starting 1/1/2014 until 11/30/2018

	D-01	
	Revised /1	Normalized
MN Jurisdiction	0.83043	1.0000
Residential	0.11400	0.1373
General Service	0.06291	0.0758
Large Light & Power	0.12627	0.1521
Large Power	0.51910	0.6251
Municipal Pumping	0.00575	0.0069
Lighting	0.00240	0.0029

1/ BEC4 2016 Factor Filing, Docket E015/M-15-876, Exhibit B-5, page 4.  
Because the revenue tracker amounts are 100% MN Jurisdictional, the factor are normalized to obtain class allocations.

**Allete, Inc., d/b/a Minnesota Power**  
**Docket No. E-015/GR-16-664**  
**Demand Responsibility for Power Supply Costs Based on 12-Month Average CP Demands (MW)**  
**2017 Test Year 2/28/2017 Supplemental Filing**  
**Volume V - Supplement Direct, AF-1, page 2 of 37, Docket E-015/GR-16-664**

Line (No)	Lowest Level of Allocation (kV)	Demand at Meter (a)	Lowest Level of Allocation		Power Supply Transmission		Power Supply Production		
			Losses to Meter Point (b)	Demand at LLA (c)	Losses on Dist Bulk Del (d)	Demand at Trans (e)	Losses on Trans Sys (f)	Demand at Prod (g)	
<b>Group A - Full Requirement Customers</b>									
1	Buhl	23	1.162	0.000	1.162	0.013	1.175	0.000	1.175
2	Gilbert	23	1.691	0.000	1.691	0.019	1.710	0.000	1.710
3	Keewatin	23	0.902	0.000	0.902	0.010	0.912	0.000	0.912
4	Mountain Iron	23	2.187	0.000	2.187	0.025	2.212	0.000	2.212
5	Nashwauk	23	2.033	0.000	2.033	0.023	2.056	0.000	2.056
6	Pierz	34	1.744	0.041	1.785	0.020	1.805	0.000	1.805
7	Randall	34	0.813	0.019	0.832	0.009	0.841	0.000	0.841
8	Biwabik	46	1.032	0.000	1.032	0.012	1.044	0.000	1.044
9	Ely	46	5.615	0.000	5.615	0.064	5.679	0.000	5.679
10	Aitkin	PST	6.078	0.000	6.078	0.000	6.078	0.000	6.078
11	Brainerd	PST	26.699	0.000	26.699	0.000	26.699	0.000	26.699
12	Grand Rapids	PST	26.029	0.000	26.029	0.000	26.029	0.000	26.029
13	Hibbing	PST	22.373	0.000	22.373	0.000	22.373	0.000	22.373
14	Proctor	PST	3.687	0.086	3.773	0.000	3.773	0.000	3.773
15	Two Harbors	PST	4.326	0.101	4.427	0.000	4.427	0.000	4.427
16	Virginia	PST	19.137	0.000	19.137	0.000	19.137	0.000	19.137
17	Group A - Total		125.508	0.246	125.754	0.197	125.950	0.000	125.950
18	- Demand Responsibility (%)						8.858		8.510
<b>Group B - Private Utilities</b>									
19	Superior Water, Light & Power Company	PST	105.521	0.000	105.521	0.000	105.521	0.000	105.521
20	Group B - Total		105.521	0.000	105.521	0.000	105.521	0.000	105.521
21	- Demand Responsibility (%)						7.421		7.130
<b>Group C - Transmission and Distribution Wheeling Service</b>									
22	Staples	34	3.514	0.000	3.514	0.040	3.554		
23	Wadena	34	10.661	0.000	10.661	0.122	10.782		
24	Group C - Total		14.175	0.000	14.175	0.162	14.337		
25	- Demand Responsibility (%)						1.008		
<b>Other</b>									
26	Other - Total						1,176.141		1,248.511
27	- Demand Responsibility (%)						82.713		84.360
<b>Total System</b>									
28	System - Total						1,421.949		1,479.983
29	- Demand Responsibility (%)						100.000 (D-02)		100.000 (D-01)

Notes:

Demand at LLA (c) = (a) + (b).

Demand at Trans (e) = (c) + (d).

Demand at Prod (g) = (e) + (f).

Demand loss factors:

Secondary (%) @ 1.25

Line Transf (%) @ 2.30

Primary (%) @ 1.99

Distribution Subs (%) @ 0.33

Dist Bulk Delivery (%) @ 1.14

Transmission losses supplied through MISO and not allocated here.

DTRAN

DPROD



**Demand Responsibility of Power Supply Cost Based on Peak & Average Methodology: D-01 & D-02  
 2017 Test Year 2/28/2017 Supplemental Filing  
 Volume V - Supplement Direct, AF-1, page 21 of 37, Docket E-015/GR-16-664**

	<u>Total Retail</u>	<u>Residential</u>	<u>General Service</u>	<u>Large Light &amp; Power</u>	<u>Large Power</u>	<u>Municipal Pumping</u>	<u>Lighting</u>
1 Annual Energy (E-01 with losses, excl. dual fuel)	8,795,413	1,048,806	682,004	1,544,886	5,477,638	18,171	23,907
2 Average Demand	1,004,043	119,727	77,854	176,357	625,301	2,074	2,729
3 Percent	100.000	11.924	7.754	17.565	62.278	0.207	0.272
4 Annual CP Demand (loss adjusted)	1,142,421	203,013	97,884	176,764	654,612	4,413	5,734
5 Percent	100.000	17.770	8.568	15.473	57.300	0.386	0.502
6 Annual Load Factor (Line 2 / Line 4)	0.87887						
7 1.0 - Load Factor	0.12113						
8 Average Factor (Line 3 x Line 6 total)	87.887	10.479	6.815	15.437	54.735	0.182	0.239
9 Peak Factor (Line 5 x Line 7 total)	12.113	2.152	1.038	1.874	6.941	0.047	0.061
10 Composite Factor - D-01 (Line 8 + Line 9)	100.000	12.631	7.853	17.311	61.676	0.229	0.300
11 Power Supply Production - D-01 Adjusted for Jurisdictional Split (Line 10 x .84360)	84.360	10.655	6.625	14.604	52.030	0.193	0.253
12 Power Supply Transmission - D-02 Adjusted for Jurisdictional Split (Line 10 x .82713)	82.713	10.449	6.495	14.318	51.014	0.189	0.248

Notes:

Residential, General Service, Large Light and Power and Municipal Pumping CP demands per customer from load research multiplied by number of customers and adjusted for losses. Large Power CP demand estimated based on 2017 budgeted average demand and the ratio of Large Power CP demand to Large Power average demand from 2012 -2015. Lighting CP is average load based on 2017 Test Year energy and 4,200 burning hours and adjusted for losses.

Minnesota Power  
BEC 4 Environmental Rider: 2018 Factor Filing  
Allocation Factors for Use Starting 12/1/2018

	D-01 /1	Normalized
MN Jurisdiction	84.360	1.0000
Residential	10.655	0.1263
General Service	6.625	0.0785
Large Light & Power	14.604	0.1731
Large Power	52.030	0.6168
Municipal Pumping	0.193	0.0023
Lighting	0.253	0.0030

1/ Refer to Exhibit B-5, page 3, line 11.

Because the revenue tracker amounts are 100% MN Jurisdictional, the factor are normalized to obtain class allocations.

**2015 BEC4 Environmental Retrofit and Ash Haul Project**

	20 yr PUP 40%	Pollution Control 60%	Weighted Average
	Weighting 1/	Weighting 2/	
Year 1	0.938%	1.1905%	1.0895%
Year 2	7.430%	14.2857%	11.5434%
Year 3	6.872%	14.2857%	11.3202%
Year 4	6.357%	14.2857%	11.1142%
Year 5	5.880%	14.2857%	10.9234%
Year 6	5.439%	14.2857%	10.7470%
Year 7	5.031%	14.2857%	10.5838%
Year 8	4.654%	13.095%	9.7187%
Year 9	4.458%	0.000%	1.7832%
Year 10	4.458%	0.000%	1.7832%
Year 11	4.458%	0.000%	1.7832%
Year 12	4.458%	0.000%	1.7832%
Year 13	4.458%	0.000%	1.7832%
Year 14	4.458%	0.000%	1.7832%
Year 15	4.458%	0.000%	1.7832%
Year 16	4.458%	0.000%	1.7832%
Year 17	4.458%	0.000%	1.7832%
Year 18	4.459%	0.000%	1.7836%
Year 19	4.458%	0.000%	1.7832%
Year 20	4.459%	0.000%	1.7836%
Year 21	3.901%	0.000%	1.5604%
	<u>100.000%</u>	<u>100.000%</u>	<u>100.000%</u>

**BEC4 2016 Costs and Boswell Ash Pond Projects**

	20 yr PUP 40%	Pollution Control 60%	Weighted Average
	Weighting 3/	Weighting 4/	
Year 1	3.750%	14.2857%	10.071%
Year 2	7.219%	14.2857%	11.459%
Year 3	6.677%	14.2857%	11.242%
Year 4	6.177%	14.2857%	11.042%
Year 5	5.713%	14.2857%	10.857%
Year 6	5.285%	14.2857%	10.685%
Year 7	4.888%	14.2857%	10.527%
Year 8	4.522%	0.000%	1.809%
Year 9	4.462%	0.000%	1.785%
Year 10	4.461%	0.000%	1.784%
Year 11	4.462%	0.000%	1.785%
Year 12	4.461%	0.000%	1.784%
Year 13	4.462%	0.000%	1.785%
Year 14	4.461%	0.000%	1.784%
Year 15	4.462%	0.000%	1.785%
Year 16	4.461%	0.000%	1.784%
Year 17	4.462%	0.000%	1.785%
Year 18	4.461%	0.000%	1.784%
Year 19	4.462%	0.000%	1.785%
Year 20	4.461%	0.000%	1.784%
Year 21	2.231%	0.000%	0.892%
	<u>100.000%</u>	<u>100.000%</u>	<u>100.000%</u>

Weighting allocation per Internal Revenue Code Regulation 1.169-4.

1/ 40% weighting is 20 year PUP tax table, mid 4th quarter

2/ 60% weighting of pollution control portion is 84 month straight line.

Plant in-service in December, so one month depreciation taken in first year and eleven months taken in final year.

Weighting allocation per Internal Revenue Code Regulation 1.169-4.

3/ 40% weighting is 20 year PUP tax table, half-year

4/ 60% weighting of pollution control portion is 84 month straight line.

Assuming plant in-service in January. For plant in-service in other months, straight line is prorated in years 1 and 8.

**Boswell Storm Water Project**

	20 yr PUP 40%	Pollution Control 60%	Weighted Average
	Weighting 5/	Weighting 6/	
Year 1	3.750%	4.7619%	4.3571%
Year 2	7.219%	14.2857%	11.4590%
Year 3	6.677%	14.2857%	11.2422%
Year 4	6.177%	14.2857%	11.0422%
Year 5	5.713%	14.2857%	10.8566%
Year 6	5.285%	14.2857%	10.6854%
Year 7	4.888%	14.2857%	10.5266%
Year 8	4.522%	9.524%	7.5231%
Year 9	4.462%	0.000%	1.7848%
Year 10	4.461%	0.000%	1.7844%
Year 11	4.462%	0.000%	1.7848%
Year 12	4.461%	0.000%	1.7844%
Year 13	4.462%	0.000%	1.7848%
Year 14	4.461%	0.000%	1.7844%
Year 15	4.462%	0.000%	1.7848%
Year 16	4.461%	0.000%	1.7844%
Year 17	4.462%	0.000%	1.7848%
Year 18	4.461%	0.000%	1.7844%
Year 19	4.462%	0.000%	1.7848%
Year 20	4.461%	0.000%	1.7844%
Year 21	2.231%	0.000%	0.8924%
	<u>100.000%</u>	<u>100.000%</u>	<u>100.000%</u>

Weighting allocation per Internal Revenue Code Regulation 1.169-4.

5/ 40% weighting is 20 year PUP tax table, half-year

6/ 60% weighting of pollution control portion is 84 month straight line.

Plant in-service in September, so four month depreciation taken in first year and eight months taken in final year.

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

AFFIDAVIT OF SERVICE VIA  
ELECTRONIC FILING AND  
MAILING VIA U.S. MAIL

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Susan Romans of the City of Duluth, County of St. Louis, State of Minnesota, says that on the **9<sup>th</sup>** day of **April, 2018** she served Minnesota Power's *Rider for Boswell Unit 4 Emission Reduction (BEC4 Rider) and 2017 Factor* on the Minnesota Public Utilities Commission and the Energy Resources Division of the Minnesota Department of Commerce via electronic filing. The persons Minnesota Power's General Service List were served as requested.



\_\_\_\_\_  
Susan Romans

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Christopher	Anderson	canderson@allte.com	Minnesota Power	30 W Superior St  Duluth, MN 558022191	Electronic Service	Yes	GEN_SL_Minnesota Power_MPs General Service List
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