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March 7, 2013

VIA ELECTRONIC FILING

Dr. Burl W. Haar
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 Petition for Approval of the Rider for Boswell Energy Center Unit 4 Emission Reduction
Docket No. E015/M-12-920

Dear Dr. Haar:

Enclosed please find Minnesota Power's Petition seeking Minnesota Public Utilities Commission ("Commission") approval of its Rider for Boswell Energy Center Unit 4 Emission Reduction ("BEC4 Rider"). Minnesota Power is seeking Commission approval pursuant to Minn. Stat. §§ 216B.683, subd. 1; 216B.686, subd. 2; and 216B.1692, subd. 3 of this Petition to recover investments and expenditures associated with the Boswell Energy Center Unit 4 Mercury Emissions Reduction Environmental Retrofit Project ("BEC4 Project") through the BEC4 Rider.

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) 355-3432 or jljohnson@mnpower.com with any questions related to this matter.

Yours truly,

Jodi Johnson

Jodi Johnson
Policy Manager

JJ:sr
Enc.

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

In the Matter of Minnesota Power's Petition for Approval of the Rider for Boswell Energy Center Unit 4 Emission Reduction (BEC4 Rider)	Docket No. E015/M-12-920

SUMMARY OF FILING

Minnesota Power submits this Petition to the Minnesota Public Utilities Commission ("Commission") pursuant to Minn. Stat. §§ 216B.683, 216B.686, and 216B.1692, and Minn. Rules 7829.1300. Minnesota Power is seeking Commission approval pursuant to Minn. Stat. §§ 216B.683, subd. 1; 216B.686, subd. 2; and 216B.1692, subd. 3 of this Petition to recover investments and expenditures associated with the Boswell Energy Center Unit 4 ("BEC4") Mercury Emissions Reduction Environmental Retrofit Project ("BEC4 Project") through the Rider for Boswell Energy Center Unit 4 Emission Reduction ("BEC4 Rider").

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STATE OF MINNESOTA
BEFORE THE
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In the Matter of Minnesota Power's Petition for Approval of the Rider for Boswell Energy Center Unit 4 Emission Reduction (BEC4 Rider)	Docket No. E015/M-12-920

I. INTRODUCTION

Minnesota Power submits this Petition to the Minnesota Public Utilities Commission ("Commission") pursuant to Minn. Stat. § 216B.683, 216B.686, and 216B.1692, and Minn. Rules 7829.1300. Minnesota Power is seeking Commission approval pursuant to Minn. Stat. §§ 216B.683, subd. 1; 216B.686, subd. 2; and 216B.1692, subd. 3 of this Petition to recover investments and expenditures associated with the Boswell Energy Center Unit 4 ("BEC4") Mercury Emissions Reduction Environmental Retrofit Project ("BEC4 Project") through the Rider for Boswell Energy Center Unit 4 Emission Reduction ("BEC4 Rider").

On August 31, 2012, Minnesota Power submitted its mercury emission reduction plan petition ("BEC4 Plan")[1] for BEC4 in compliance with Minn. Stat. § 216B.6851 to the Commission and Minnesota Pollution Control Agency ("MPCA").[2] Minnesota Power plans to execute an environmental retrofit project on BEC4 as a multi-pollutant solution for reducing mercury, particulate matter, sulfur dioxide, and other hazardous air pollutants being addressed by United States Environmental Protection Agency ("EPA") regulations while also reducing plant wastewater. Minnesota Power plans to install a semi-dry flue gas desulfurization system ("FGD"), fabric filter ("FF") and powder activated carbon injection system ("PAC") 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-

[1] BEC4 Plan Petition filed on August 31, 2012, in Docket No. E015/M-12-920.
[2] On March 1, 2013, the MPCA filed its report on the BEC4 Plan with the Commission stating the project was appropriate for accomplishing the objectives of reducing emissions of mercury and other pollutants under Minn. Stat. §§ 216B.68 to 216 B.688.

effectively achieve the mercury emission reduction required by MERA while ensuring compliance with other regulatory programs over the long term.

With Commission approval of the Project in 2013 and the granting of a one-year extension for completion by the MPCA, Minnesota Power will comply with MATS within the allocated EPA timeframe. The timing of the BEC4 Project will also benefit customers in that it will allow Minnesota Power to get ahead of other utilities in securing competitive project pricing, technology selection, requesting necessary outage(s) from MISO, and contracting with skilled trades to construct the Project. Under the current BEC4 Project schedule, Minnesota Power would be in compliance with MERA more than two years in advance, providing significant environmental benefits to the region well in advance of when required by Minnesota law.

With the submittal of this Petition, the Commission will be able to review and evaluate Minnesota Power's BEC4 Plan and BEC4 Rider under Minn. Stat. §§ 216B.6851, 216B.683, 216B.686 and 216B.1692. With Commission approval of the BEC4 Plan and BEC4 Rider, Minnesota Power will include a line item adjustment on customers' monthly electric bills to recover the investments and expenditures associated with the BEC4 Project.

II. PROCEDURAL MATTERS

Pursuant to 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 the BEC4 Rider Petition on the Department of Commerce - Division of Energy Resources ("the Department") and the Minnesota Office of the Attorney General– Antitrust and Utilities Division. Pursuant to Minn. Stat. § 216B.684 the MPCA is being served a copy. 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))

Christopher Anderson
Associate General Counsel
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canderson@allete.com

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

This Petition is being filed on March 7, 2013. The proposed effective date of the BEC4 Rider is the date of the Commission's Order.

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, subd. 1(a). Minnesota Power may file for approval of its BEC4 Rider under Minn. Stat. § 216B.1692, subd. 3. Under Minn. Stat. § 216B.1692, subd. 5(a), the Commission is required to wait until after receiving the MPCA's environmental assessment of Minnesota Power's BEC4 Plan Petition proposal before proceeding with written and oral comments. Also, under Minn. Stat. §§ 216B.6851, subd. 6(b) and 216B.686, subd. 4, within 180 days of receiving the MPCA's environmental assessment the Commission shall approve the petition and associated emissions reduction rider if the Commission finds the BEC4 Plan Petition meets applicable Mercury Act requirements.

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 BEC4 Emission Reduction Rider will have no effect on Minnesota Power's base rates. The additional information required under Minn. Rule 7829.1300, subp. 4(F) is included throughout this Petition.

9. Service List (Minn. Rule 7829.0700)

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III. BEC4 RIDER AUTHORITY

Minn. Stat. § 216B.683, subd. 1 provides the following for filing of emission reduction riders:

(a) A public utility required to file a mercury emissions-reduction plan under sections 216B.68 to 216B.688 may also file for approval of emissions-reduction rate riders pursuant to section 216B.1692, subdivision 3, for its mercury control and other environmental improvement initiatives under sections 216B.68 to 216B.688.

(b) In addition to the cost recovery provided by section 216B.1692, subdivision 3, the emissions-reduction rate riders may include recovery of costs associated with

(1) the purchase and installation of continuous mercury emission-monitoring systems,

(2) costs associated with the purchase and installation of emissions-reduction equipment,

(3) construction work in progress,

(4) ongoing operation and maintenance costs associated with the utility's emission-control initiatives, including, but not limited to, the cost of any sorbent or emission-control reagent injected into the unit,

(5) any project costs incurred before plan approval that are demonstrated to the commission's satisfaction to be part of the plan, and

(6) any studies undertaken by the utility in support of the emissions-reduction plan.

(c) The utility may propose to phase in the emissions-reduction riders to recover these costs over the development and life of the projects.

Minn. Stat. § 216B.686, subd. 2 provides the following for utilities required to submit mercury-reduction plans under sections 216B.68 to 216B.688 that may also propose plans for investments and related expenses in pollution control equipment to be installed at facilities in Minnesota needed to comply with state or federal emission-control statutes:

> A public utility that files a plan under this section may also file for approval of an emissions-reduction rate rider under section 216B.683, subdivision 1.

Further, Minn. Stat. § 216B.1692, subd. 3 allows a public utility to petition the Commission for approval of an emissions-reduction rider to recover the costs of a qualifying emissions-reduction project outside of a general rate case proceeding under section 216B.16. Pursuant to subd. 3(a), in its filing, the public utility shall provide:

(1) a description of the planned emissions-reduction project;

(2) the activities involved in the project;

(3) a schedule for implementation;

(4) any analysis provided to the Pollution Control Agency regarding the project;

(5) an assessment of alternatives to the project, including costs, environmental impact, and operational issues;

(6) the proposed method of cost recovery;

(7) any proposed recovery above cost; and

(8) the projected emissions reductions from the project.

Pursuant to subd. 3(b), nothing in this section precludes a public utility or interested party from seeking commission guidelines for emissions-reduction rider filings; however, commission guidelines are not required as a prerequisite to a public utility-initiated filing.

IV. BEC4 PROJECT

A. PROJECT OVERVIEW

1. Proposed BEC4 Project

BEC4 is located in Cohasset, Minnesota and was placed into service in 1980. BEC4 employs 75 full-time Minnesota Power employees. Its boiler is a tangentially-fired steam generator that operates at over 635 MW gross capability and 585 MW net capability available as net output due to 50 MW of existing station service required to operate auxiliary equipment. As proposed, the BEC4 Project will utilize commercially-available, state-of-the-art, multi-pollutant technology designed not only to meet MERA requirements, but also to achieve the necessary mercury, particulate matter ("PM") and hydrogen chloride ("HCl") emission reductions mandated under the MATS Rule. Thorough engineering analysis of the environmental control technology selected has shown that the proposed BEC4 Project will be a practical and cost-effective solution for BEC4 given its size, baseload use and the other environmental requirements that must be addressed in the coming years.

As part of the BEC4 Project, Minnesota Power proposes to install a proven, utility scale, commercially available semi-dry FGD system for the removal of SO_2, PM and mercury, as part of the BEC4 Project. Several semi-dry FGD system technologies were considered. In October 2012, Minnesota Power awarded the contract to Alstom. Alstom's CDS technology will also further reduce emissions of acid gases, including HCl and trace metals. Minnesota Power further proposes to install a PAC injection system to capture flue gas mercury, in combination with the fabric filter integral to the CDS technology to control PM and help optimize mercury removal performance. Additional detail on the proposed BEC4 Project is discussed in Minnesota Power's BEC4 Mercury Emission Reduction Plan Petition, Section V.A.[3]

[3] BEC4 Plan Petition filed on August 31, 2012, in Docket No. E015/M-12-920.

2. Analysis and Consideration

As reflected in Section V.C. of the BEC4 Plan Petition, Minnesota Power provides an analysis and consideration of emission reduction, cost effectiveness and environmental/health benefits. The Company expects it will achieve approximately 90 percent mercury removal at BEC4 using PAC in combination with the fabric filter, with co-benefit emission reductions for SO_2 and PM based on expected performance of the NID technology as guaranteed by the selected vendor. Cost effectiveness of the BEC4 Project was analyzed on two dimensions. The first dimension was to evaluate various retrofit plans for BEC4 considering available retrofit technologies to determine the least cost alternative to meet the MERA and MATS requirements. The second dimension of the cost-effectiveness analysis was to compare BEC4, as the least-cost alternative installed, to other resource alternatives to BEC4. The results of and additional detail on the emission reduction, cost effectiveness and environmental/health benefits analysis is located in Section V.C of Minnesota Power's BEC4 Mercury Emission Reduction Plan Petition.

3. Emission Reduction Alternative Considerations and Findings

The energy and capacity provided from BEC4, the largest generating resource in Minnesota Power's fleet, is an essential component of Minnesota Power's customers' supply. BEC4 generates a very large quantity of reliable energy at a reasonable cost 24 hours a day and is a baseload resource for the region's energy intensive requirements. In light of environmental rules anticipated to affect BEC4, Minnesota Power diligently worked to identify environmental compliance alternatives and ultimately determined that retrofitting BEC4 as proposed in the BEC4 Plan Petition was the best option to pursue to meet the upcoming compliance requirements for the federal MATS and state MERA requirements. The analyses of other resource alternatives are described in Sections VII and VIII, and fully outlined in Appendix A, of the BEC4 Plan Petition. The results confirmed that BEC4 is needed for serving Minnesota Power customers over the long term and that the BEC4 Project is the most reasonable and cost-effective way to meet the unit's environmental compliance requirements.

B. PROJECT SCHEDULE

Given the magnitude of the BEC4 Project, Minnesota Power must carefully coordinate installation of the individual components, while concurrently balancing the operation of the unit to continue to serve customers. In addition, there is a need to provide considerable upfront time for conceptual engineering, final design, procurement and construction. Equipment and labor resource (e.g., skilled craft, engineering) availability were strategically considered in developing a schedule. Similarly, effort was made to schedule the required outage(s) at the optimal time for customers in order to minimize replacement energy costs and associated operation and maintenance costs. Final tie-in of the entire BEC4 Project will occur during a single scheduled maintenance outage. Minnesota Power plans to begin onsite construction for the BEC4 Project in spring 2013, assuming receipt of construction permits, with in-service expected by year-end 2015. The following table is the projected schedule for implementation activities:

Table 1--Project Implementation Activity

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

Additional detail on the proposed BEC4 Project schedule and activities involved is discussed in Minnesota Power's BEC4 Mercury Emission Reduction Plan Petition, Section V.B.[4]

[4] BEC4 Plan Petition filed on August 31, 2012, in Docket No. E015/M-12-920

C. SUMMARY OF INVESTMENTS AND EXPENDITURES

Minnesota Power will employ multiple steps during the BEC4 Project to help ensure the lowest overall cost for the Project. The Company will use its purchasing procedures to obtain competitive quotations for major purchases, including equipment and labor packages, and award contracts to bidder(s) based on the best overall economic value for its customers. As reflected in Minnesota Power's BEC4 Plan Petition, the Company estimates the BEC4 Project total capital cost will be approximately $350 million. The total capital cost reflects Minnesota Power's 80 percent[5] ownership interest in the equipment and facilities that comprise the BEC4 Project. The Project cost estimates have been developed based on consulting engineers' like-kind project experience and vendor proposals, as well as Minnesota Power engineering resources and experience. Minnesota Power and its contractors will be responsible for project management, permitting, licensing and approvals, site preparation, balance of plant construction, and ancillary facilities. Table 2 reflects the project cost breakdown:

Table 2--Project Cost Breakdown -- Minnesota Power's Share[5]

	Capital (000s)	Annual Incremental O&M (000s)
NID/ Fabric Filter	$ 251,800	$ 9,100
PAC System	$ 9,200	$ 300
Ductwork	$ 34,900	$ –
Ash Handling Systems	$ 53,900	$ 3,100
Total	**$ 349,800**	**$ 12,500**

Minnesota Power anticipates annual incremental O&M expense for the BEC4 Project to be approximately $12.5 million for the period ending June 30, 2017 as shown in Table 2. This annual cost is an estimate and is based upon the cost to operate similar facilities, as well as estimates provided by CDS vendors. Additional detail on the BEC4 Project's estimated project costs, project controls and operational and construction logistics are discussed in Minnesota Power's BEC4 Mercury Emission Reduction Plan Petition, Section VI.A.[6]

[5] 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 associated with the BEC4 Project. Amounts reflected are net of WPPI's 20% ownership interest in BEC4. Amounts include approximately $3.8 million of AFUDC. Annual incremental O&M amounts are reflected consistent with the periods utilized for calculation of customer impacts.
[6] BEC4 Plan Petition filed on August 31, 2012, in Docket No. E015/M-12-920.

V. RISK FACTORS

Minnesota Power recognizes the potential for construction risks associated with the execution of the BEC4 Project as with any significant construction effort. The Company's goal is to deliver an on time, efficiently built, cost-effective environmental retrofit project that allows Minnesota Power to serve the growing energy needs of its customers economically and reliably, while also meeting its environmental responsibilities. The Company understands, based on Commission precedent, that cost recovery of eligible rider expenses is limited to the cost estimates as established in the Company's initial petition. The Company may seek recovery of other costs on a prospective basis, with no deferred accounting, in a subsequent rate case.

The following areas are intended to provide the Commission, the Department, and other stakeholders with a high-level understanding of the Company's efforts to identify and manage potential construction issues related to this Project. Minnesota Power has identified the key issues noted below that may impact this particular Project. These factors do not include general business risks that might impact any construction project or business operations or other risks that might impact any business enterprise. Minnesota Power intends to establish a formal framework to identify, monitor, mitigate and report on these potential issues.

- Due to the significant number of projected EPA compliance outages combined with regular outages within MISO, outage approval and timing could impact the project schedule, resulting project costs and replacement energy costs.

  Minnesota Power has proactively requested an outage to complete the CDS transition from October 3, 2015 to November 29, 2015 and continues to closely monitor MISO's evaluation of this planning timeframe. The Company has also collaborated with MISO in their projected resource planning activities around EPA regulations in a coordinated fashion across the MISO footprint. Outages are approved well in advance, so Minnesota Power expects to have an advance assurance of these plans in time to accommodate any adjustments to schedule or duration.

- Delays in obtaining environmental permits could lead to construction delays and potentially result in increased project costs.

Minnesota Power engaged permitting agencies early in the planning process to effectively incorporate their input into various permit applications. The Company utilized expediting provisions under Minnesota policies to advance processing of its air permit in a timely manner. Permit applications have been submitted such that anticipated permitting timelines support construction beginning in spring 2013.

- Significant construction efforts within the region or adjacent to the region could lead to resource constraints. Availability and/or competition for skilled labor, engineering services and commodities may result in productivity and/or quality issues, leading to potential cost changes.

  Minnesota Power maintains a constructive relationship with the region's skilled labor organizations and has a strong reputation for a safe, high quality and productive work environment. The Company will work with the contractor awarded to erect the Project to coordinate with other regional project demands and macroeconomic factors.

- The CDS technology selected is relatively new in the United States, thus limiting the number of vendors with direct CDS experience.

  In the course of evaluating various emission control technologies, the project team toured and evaluated a half dozen different sites in the United States and Europe, to gain insights into best practices and key design consideration of their CDS installations. These insights were used in developing the request for proposal of the CDS, integrating best practices into the Project. The Company selected and contracted Alstom for the BEC4 project. Alstom will provide several valuable performance guarantees to assure conformance with the project emission reduction imperatives. Minnesota Power will monitor the project for quality assurance and vendor conformance to the contracts.

- Minnesota Power intends to secure a majority of the total cost of the BEC4 Project in fixed fee/lump sum contracts that are competitively bid; however, the Company may be subject to commodity price volatility as market prices fluctuate and the project scope and cost estimates, including quantities of commodities necessary to complete the Project, are further refined as detailed engineering is advanced and contracts are secured.

Minnesota Power has capped the impact of reagents in the CDS contract to manage cost via contract provisions. Further, ALLETE's risk management department and risk committee has macro oversight for overall project execution risk in conjunction with the project team. Together, sourcing strategies, hedging options and firm price contracts will be considered and developed for construction and on-going operations to deliver the least cost project for customer benefit.

VI. PROJECT COMMUNICATION AND FILING

Minnesota Power will provide ongoing communication with the Commission, the Department and other stakeholders prior to and upon approval and throughout Project construction. Minnesota Power will supplement the record with several additional updates related to the BEC4 Project in addition to annual factor filings and an in-service filing. Minnesota Power voluntarily commits to providing the following updates related to achieved project milestones as part of the BEC4 Plan Petition comment process or through additional filings:

- Milestones achieved with the air and wetland/water permitting;
- Delivery of CDS technology and fabric filter to the project site;
- Installation of CDS and fabric filter is complete; and
- Minnesota Power also will submit annual reports to the Commission on the achievement of its mercury, SO2, and PM reduction progress once commissioning and tuning is completed for up to five years.

On January 28, 2013, the MPCA granted Minnesota Power's Boswell Unit 4 a one-year extension of the compliance deadline for the Mercury and Air Toxics Standard. The extended compliance deadline is the earlier of April 16, 2016, or the date of completion of Unit 4 control equipment installation, startup, and tuning.

Further, as part of the BEC4 Plan Petition, Minnesota Power committed to reporting WPPI Energy's progress in obtaining its Certificate of Authority from the Public Service Commission of Wisconsin ("PSCW"). Minnesota Power is pleased to report that WPPI Energy received its Certificate of Authority from the PSCW on February 11, 2013.[7]

On March 1, 2013, the MPCA issued its report in support of the Project stating that it is appropriate for accomplishing the objectives of reducing emissions of mercury and other pollutants under Minn. Stat. §§ 216B.68 to 216B.688, bringing Boswell Unit 4 into compliance with federal air emission standards, resolving environmental violations, and avoiding additional

[7] PSCW Docket No. 6685-CE-110.

regulatory requirements related to coal combustion residuals. Reduction of mercury will aid Minnesota in achieving its requirement to address water quality impairments related to mercury contamination of fish. The MPCA recommends that the Commission accept the report findings.

VII. COST RECOVERY

A. BEC4 Rider and Rate Book Updates

A copy of the BEC4 Rider is provided in Exhibit A. In connection with the BEC4 Rider, Minnesota Power proposes to add a line item adjustment to customers' monthly electric bills to recover the costs of the BEC4 Project. In addition, the following language will be added to the Adjustments section of each of the service schedules listed below:

> "There shall be added to the monthly bill, as computed above, an emissions-reduction adjustment determined in accordance with the Rider for Boswell Unit 4 Emission Reduction."

Affected Service Schedule	Rate Code(s)
Residential	20, 22, 23
Residential Dual Fuel Interruptible	21
Residential Controlled Access	24
General Service	25
Commercial/Industrial Dual Fuel	26
Commercial/Industrial Controlled Access	27
Large Light and Power	55, 75
Large Power	54, 74
Non-Contract Large Power Service	78
Outdoor and Area Lighting	76, 77
Erie Mine Site	72
Municipal Pumping	87
Street and Highway Lighting	80, 83, 84

Minnesota Power is requesting a variance from Minn. Rule 7825.3600 because the BEC4 Rider includes the same two-line change to all of the service schedules listed above.

Minn. Rules 7825.3600 states:

> All proposed changes in rates shall be shown by filing revised or new pages to the rate book previously filed with the commission and by identifying those pages which were not changed. Each revised or new page of the rate book shall contain the information required for each page of the rate book and shall be in a format consistent with the currently filed rate book. In addition, each revised page shall contain the revision number and page number of the revised page.

Based on this Rule, Minnesota Power concludes that a variance is necessary to allow the Company to provide the revised rate book pages in a subsequent compliance filing. Thus, the Company seeks a variance permitting revisions to the Affected Service Schedules ("Schedules") as listed above with the proposed language in a subsequent compliance filing. Consistent with past practice,[8] Minnesota Power requests that it not be required to file at this time the revised tariff pages reflecting the proposed references nor to identify those pages which were not changed. The revised tariff pages can be provided during compliance filings. The Commission Rules provide a three-part test for variances under Minn. Rules 7829.3200. Minnesota Power asserts that this test provides and is satisfied as follows:

1. Enforcement of the rule would impose an excessive burden upon the applicant or others affected by the rule.

As discussed above, this request involves updating of the listed Schedules in a subsequent compliance filing. Due to the significant number of Schedules, Minnesota Power believes that providing the proposed language and the Schedules and Rate Codes to be impacted allows for adequate Commission review, while identifying the proposed changes in rates and the associated rate book impacts. Updating of the impacted Schedules in a compliance filing will allow for Commission approval of proposed rates in this instant Docket.

2. Granting the variance would not adversely affect the public interest

The proposed changes in rates will not take effect until after the Commission's review of the BEC4 Plan and Rider petitions in this Docket. The Commission retains oversight of the proposed rates, as well as the impacts to the rate book, affected Schedules and Rate Codes. This oversight assures that the Company will continue to have rates that are in the public interest. Additionally, granting of a variance would not harm ratepayers because they, as well as the Commission, will have notice of the affected rates due to filing of the revised rate book pages in the subsequent rate adjustment compliance filing.

[8] Refer to Docket No. E015/M-07-216.

3. Granting the variance would not conflict with standards imposed by law.

This variance would not conflict with law. The Company believes granting of the variance is appropriate. Because the subsequent compliance filing will reflect the outcome of the Commission's review of the proposed language and rate book updates, the granting of this variance offers the most direct and consistent way of addressing this issue, by providing adequate notice of the proposed change now, but updating the revised tariff sheets later in compliance with the Commission's order.

Upon Commission approval, all of the revised rate book pages will be provided in a compliance filing. See an example of a customer bill in Exhibit C. Minnesota Power proposes to update the BEC4 Rider annually through annual rate adjustment compliance filings until the costs are incorporated into base rates as part of a general rate case.

B. BEC4 Project - Revenue Requirements

Retail revenue requirements projected for the BEC4 Rider for the twelve month period ended June 30, 2014 and June 30, 2017, are $11.4 million and $43.1 million, respectively. A description of the revenue requirement components is provided below. The revenue requirement calculations are included in Exhibits B-1 to B-7.

1. Return on Construction Work in Progress ("CWIP")

Minnesota Power will record capital expenditures related to the BEC4 Rider in Federal Energy Regulatory Commission ("FERC") account 107 – CWIP. Minnesota Power is requesting a current return on CWIP on the components that are not yet placed in-service beginning when cost recovery under the BEC4 Rider is approved by the Commission. A return on CWIP will be the only component of revenue requirements recovered under the BEC4 Rider until the components not yet in-service are placed in-service. Completion of the BEC4 Project is expected by December 2015. The five phases of Ash Pond projects are expected to be completed between 2016 and 2032, with Phase 1 targeted for completion in 2016.

a) Allowance for Funds Used During Construction ("AFUDC")

The Company will calculate AFUDC for the Boswell 4 Project and record an offsetting regulatory liability (referred to as a "contra" entry) equaling 100 percent of the Project's AFUDC and include that regulatory liability as a reduction to rate base through an entry to "Pre-funded AFUDC Regulatory Liability." After the Project is placed in-service, the amount of the Pre-funded AFUDC Regulatory Liability will be amortized over the life of the Project.

In a December 2010 Order, FERC prescribed specific accounting treatment, which requires the Company to record the Pre-funded AFUDC Regulatory Liability by debiting Account 407.3, Regulatory Debits, and crediting Account 254, Other Regulatory Liabilities, in accordance with the instructions of those accounts. In addition, the Company will amortize the Pre-funded AFUDC Regulatory Liability as an offset to depreciation expense by debiting Account 254 and crediting Account 407.4, Regulatory Credits. The Company will also maintain all necessary controls to ensure the amount of the Pre-funded AFUDC Regulatory Liability recorded in Account 254 includes the total amount of AFUDC accrued on the BEC4 Project.

This FERC approved methodology for the application of AFUDC is currently being applied to all Minnesota Power current cost recovery rider projects.

b) Return on Investment – CWIP

Revenue requirements during the construction phase of the project will be based on the average monthly CWIP balance of the BEC4 Project. The Return on Investment – CWIP will be calculated on the average of the beginning and ending monthly CWIP balances until the project is placed in-service. The components of the revenue requirement will include an after-tax return on equity component, current and deferred income taxes and interest expense. The total annual revenue requirements are the sum of the monthly current return on CWIP calculations until the project is placed in-service. At that time, the ending CWIP balance is transferred to plant in-service and Minnesota Power will begin to recover full revenue requirements.

(i) Return on Equity Component

As contemplated by Minn. Stat. § 216B.1692, subd. 5(b)(2), the return on investment will be based on Minnesota Power's last retail rate case.[9] Minnesota Power will use the average monthly CWIP balance multiplied by the after-tax equity return percentage and the equity percentage of the allowed capital structure from the last rate case to calculate the return on equity component of the revenue requirement calculation.

[Return on Equity Component = Average Monthly CWIP Balance X After-Tax Equity Return Percentage X Capital Structure Equity Percentage]

(ii) Income Tax Expense Component

Minnesota Power will include a component of the revenue requirement calculation to recover the effective rate of taxes. This represents both current and deferred income taxes. The income tax amount will be based upon the Return on Equity component of the revenue requirement to equate it to a pretax amount.

[Income Taxes = Return on Equity Component X 1/(1-41.37%) X 41.37%]

[9] Docket No. E015/GR-09-1151.

(iii) Interest Expense Component

Minnesota Power will include a component of the revenue requirement calculation to recover an equivalent amount of interest expense that would be incurred given the investment in the Project. The interest component will be calculated based on the average monthly CWIP balance times the debt rate approved in the last rate case times the debt percentage of the allowed capital structure from the last rate case.

[Interest Expense = Average Monthly CWIP Balance X Debt Return Percentage X Capital Structure Debt Percentage]

2. Full Revenue Requirements – In-service

Full revenue requirements will be based on the Original Installed Cost ("OIC") when the BEC4 Project is placed in-service. As described in greater detail below, the in-service revenue requirements will be calculated using the adjusted average monthly rate base for the Project plus related expenses. The components of the revenue requirement will include an after-tax return on investment, current and deferred income taxes, interest expense, depreciation expense, property taxes and other incremental operation and maintenance ("O&M") expenses related to the Project.

a) Adjusted Average Rate Base

Adjusted average rate base will be calculated using the monthly balance of the Project's OIC reduced by the accumulated depreciation for the Project. The adjusted average rate base will also be adjusted for any differences between book and tax depreciation expense through accumulated deferred income taxes. To the extent the Company is unable to utilize tax deductions generated by the Project and recorded in accumulated deferred income taxes to reduce current income tax expense, deferred tax assets will be established and included as an adjustment to adjusted average rate based until these deductions can be realized by the Company.

b) Return on Equity Component

As contemplated by Minn. Stat. § 216B.1692, subd. 5(b)(2), the return on investment will be based on Minnesota Power's last retail rate case.[10] Minnesota Power will use the average monthly adjusted rate base multiplied by the after tax equity return percentage and the equity

[10] Docket No. E015/GR-09-1151.

percentage of the allowed capital structure from the last rate case to calculate the return on equity component of revenue requirements.

[Return on Equity Component = Average Monthly Adjusted Rate Base X After-tax Equity Return Percentage X Capital Structure Equity Percentage]

c) Income Tax Expense Component

Minnesota Power will include a component of the revenue requirement calculation to recover the effective rate of taxes. This represents both current and deferred income taxes. The income tax amount will be based upon the Return on Equity component of the revenue requirement to equate it to a pre-tax amount.

[Income Taxes = Return on Equity Component X 1/(1-41.37%) X 41.37%]

d) Interest Expense Component

Minnesota Power will include a component of the revenue requirement calculation to recover an equivalent amount of interest expense that would be incurred given the investment in the Project. The interest component will be calculated based on the average monthly adjusted rate base times the debt rate approved in the last rate case times the debt percentage of the allowed capital structure from the last rate case.

[Interest Expense = Average Monthly Adjusted Rate Base X Debt Return Percentage X Capital Structure Debt Percentage]

e) Depreciation Expense Component

Once the assets are placed in service, depreciation on the BEC4 Project will be recovered through the Boswell 4 Project Rider. Depreciation expense will be calculated on a straight line basis over the life of the project on the components and will begin as the assets are placed in-service.

f) Property Tax Component

All components of the projects are expected to qualify for a property tax exemption. Minnesota Power will file for and request this exemption in 2015. If this exemption is not granted, property tax expenses will be included in the projected revenue requirements.

g) O&M Expense Component

Minnesota Power anticipates O&M expense associated with the BEC4 Project to be approximately $12.5 million for the period ending June 30, 2017, and generally includes annual equipment maintenance costs, consumable chemicals and reagents for the emission control equipment and incremental ash byproduct removal expenses.

C. Certain Tax Matters and Bonus Depreciation

The computation of revenue requirements and rate impacts uses the Federal and State income tax laws currently enacted. Under current Federal law, the beneficial bonus tax depreciation provision ends on December 31, 2013, with a transition rule for property already under construction. Therefore, no bonus tax depreciation is currently anticipated for this project, nor is a tax net operating loss included in the current computation of estimated revenue requirements. If any future tax law materially changes the revenue requirements for this project, the Company will notify the Commission within 30 days.

D. Cost Allocation and Rate Design

As part of the cost allocation and rate design analysis, Minnesota Power considered three allocation methodologies to allocate the BEC4 Project revenue requirements to the Company's retail customer classes. The Company believes the P&A methodology, as discussed below, is reasonable and helps Minnesota Power maintain competitive customer rates commensurate with the Commission's consideration under Minn. Stat. §§ 216B.6851, subd. 6(b), 216b.686, subd. 4.

1. Cost Allocation Methodologies

a) Peak & Average Demand Method (D-01/P&A)

Minnesota Power proposes to allocate the BEC4 Project revenue requirements between jurisdictions based on the Power Supply Production Demand (D-01) allocator as approved in Minnesota Power's 2009 retail rate case.[11] Once the revenue requirements are brought to jurisdiction, they would then be allocated to Minnesota Power's retail classes using the Peak & Average Demand ("P&A") allocator, also as approved in Minnesota Power's 2009 rate case. The

[11] Docket No. E-015/GR-09-1151.

P&A methodology allocates fixed production to class based on a composite allocation factor that is composed of two parts – 1) an average demand (or energy), and 2) a coincidental peak.

This methodology would also be consistent with how BEC4 Project costs would be treated when rolled into base rates in a future rate case. Because the BEC4 Project does not result in increased energy production and consists primarily of fixed costs, Minnesota Power believes it is appropriate to allocate the costs based primarily on demand. This methodology is also consistent with how the Boswell 3 Environmental project costs were classified and allocated when rolled into base rates in Minnesota Power's 2009 rate case. Refer to Exhibit B-6, page 1 of 1, line 11, for details of these allocators and Exhibit B-1, page 1 of 1, for the results of this allocation. These allocators from Minnesota Power's most recent rate case will be incorporated in the Company's annual compliance filings under the BEC4 Rider.

b) Energy Method (E-01/E8760)

An alternative methodology would be to allocate the revenue requirements between Minnesota Power's FERC and Minnesota jurisdictions based on the Power Supply Production Energy (E-01) allocator. The Minnesota jurisdictional revenue requirements would then be allocated to Minnesota Power's retail classes using the E8760 energy allocator. These allocators are the mostly recently approved energy allocators from Minnesota Power's last retail rate case. This allocation methodology was used in the BEC4 Plan Petition to be consistent with the methodology used in Minnesota Power's Boswell 3 Environmental Plan Filing cost allocation. Refer to Exhibit B-5, page 1 of 1, column 10, for details of these allocators.

c) Coincident Peak Demand Method (D-01/CP)

Another alternative allocation methodology is the Coincident Peak ("CP") Demand method. Under this method, the revenue requirements are also allocated between jurisdictions based on the Power Supply Production Demand (D-01) allocator. Once the revenue requirements are brought to jurisdiction, they would then be allocated to Minnesota Power's retail classes based on each class's proportional contribution to the coincidental peak. This method more closely aligns the jurisdictional and class allocations, as the D-01 jurisdictional allocator is based on 12-month average coincident peak. In addition, this method more closely aligns the allocations to classes in Minnesota Power's retail and FERC jurisdiction, since fixed production

costs are allocated to FERC regulated wholesale customers based on 12-month average coincident peak using a cost-based, formula rate methodology. Refer to Exhibit B-6, page 1 of 1, line 13 for the CP allocators. As shown, these allocators are based on the same coincidental peaks used to develop the P&A allocators as approved in Minnesota Power's 2009 retail rate case.[12]

2. Rate Design

The Company proposes that the Large Power ("LP") rate design for the Boswell 4 Plan Adjustment incorporate demand ($/kW-month) and energy (¢/kWh) adders that recover BEC4 Project costs in a manner that preserves existing LP base rate design. Specifically, the LP revenue requirements would be split between demand and energy based on LP's base rate demand and energy revenue split of approximately 60 percent demand and 40 percent energy from Minnesota Power's most recent general rate case. This split would be updated in Minnesota Power's annual compliance filings to reflect base rates resulting from any future rate case. The LP demand rate adder would be calculated as 60 percent of the projected 12-month LP revenue requirement divided by the LP class Billing Demand (kW-month) from Minnesota Power's most recent budget. The LP energy rate adder will be calculated as 40 percent of the projected 12-month LP revenue requirement divided by the LP energy (kilowatt-hour) sales from Minnesota Power's most recent budget.

The Company proposes that the remaining retail rate classes will have an energy rate adder only. This energy adder would be calculated as a separate energy-based (kWh) charge consisting of the projected 12-month revenue requirement of each class divided by the energy (kWh) sales of each class from Minnesota Power's most recent budget.

The revenue requirements and billing units for all classes will be updated for the BEC4 Project in Minnesota Power's annual compliance filings under the BEC4 Rider.

[12] Docket No. E-015/GR-09-1151.

E. Rate Adjustment Filings and Tracker Mechanism

Following approval of the BEC4 Plan and Emission Reduction Rider Petitions by the Commission, Minnesota Power will file its billing rate adjustment compliance filing associated with the these Petitions with the Commission. The Company will then file annually to adjust the Boswell 4 Plan Adjustment billing factor ("Factor Filing") to be shown as a separate line item on customer bills. These Factor Filings will approximate the revenue requirements Minnesota Power expects over the upcoming year. The actual revenue requirement will be booked to a tracker account and recorded as a regulatory asset on the Company's books. The tracker balance created due to the difference between the actual revenue requirements allocated to class and the amount received from customers by class for the period will be accumulated and added to or subtracted from the revenue requirements by class in a subsequent period Factor Filing calculation.

1. Tracker Mechanism Accounting

In support of the Factor Filings, Minnesota Power will implement a tracker mechanism to account for retail revenue requirements once the BEC4 Rider is approved, continuing until all costs have been fully recovered or reflected in general rates. Specifically, Minnesota Power will place the revenue requirement in FERC Account 182.3, Other Regulatory Assets ("Tracker Account"), and reduce the revenue requirement amount in Account 182.3 as Minnesota Power's anticipated revenue requirements are recovered through billings to customers through the BEC4 Rider.

Each month as revenue requirements are calculated and billing factor amounts are collected from retail customers, Minnesota Power will record these amounts in the tracker mechanism. Revenue requirements will increase the tracker balance, and amounts collected from customers will reduce the tracker. In addition, any revenues generated from the sale of emission allowances that are created from the BEC4 Rider will be included in the tracker for the benefit of customers. Minn. Stat. § 216B.1692, subd. 5(b)(1).

2. Tracker Mechanism Settlement

The tracker balance in FERC Account 182.3, Other Regulatory Assets at any given time reflects the difference between calculated revenue requirements and amounts either under collected or over collected from retail customers based on annual billing factor collections over the life of the BEC4 Rider. Minnesota Power does not propose to calculate carrying charges on the monthly tracker account balance.

F. Revenue Requirement Allocation Adjustments

In the event that Minnesota Power's actual total load associated with individual Large Power and/or wholesale customers increases or decreases by 100 MW or more for one calendar year compared to the load for such customers that was included in the Company's last retail rate case[13] test year, Minnesota Power will file adjusted jurisdictional and retail allocation factors for the projected annual time period in the next Factor Filing to reflect the change in actual load.

G. Termination of Cost Recovery

Minnesota Power will terminate recovery through the BEC4 Rider when the Project revenue requirements have been fully recovered or reflected in general rates. Any balances in related tracker accounts will also be added to or subtracted from the revenue requirements in the general rate case proceeding. In the event Minnesota Power files a general rate case prior to the in-service date of some or all parts of BEC4 Project, Minnesota Power will continue to recover a current return on CWIP under the BEC4 Rider for those components not yet placed in-service prior to the start of the test year. For those projects that are in-service prior to a general rate case test year, full revenue requirements will be incorporated into base rates.

[13] Docket No. E015/GR-09-1151.

VIII. CUSTOMER IMPACT

A. Customer Notification & Billing

Minnesota Power proposes to notify customers of the BEC4 Rider through a bill insert prior to the application of the Boswell 4 Plan Adjustment. Minnesota Power will work with Commission Staff and the Department in the development of this customer notification. The Boswell 4 Plan Adjustment will appear as a separate line item on customer bills. A sample customer bill with the proposed Boswell 4 Plan Adjustment is attached at Exhibit C.

B. Estimated Customer Impacts

1. Estimated Rate Impacts using Peak & Average (P&A) Allocation Method

Minnesota Power is proposing to allocate the Minnesota jurisdictional revenue requirements to each rate class using the P&A allocators. Table 3 summarizes the estimated revenue requirements and rate impacts by customer class using the P&A allocation method, assuming current cost recovery beginning in July 2013. For the average residential customer, the rate impact for the first twelve months of current cost recovery of the BEC4 Project would be approximately $1.18 per month or a 1.57 percent rate increase. For the twelve months ending June 30, 2017, this impact will increase to $4.45 per month or a 5.94 percent rate increase. For Large Power customers, the estimated rate impact for the first twelve months of current cost recovery of the BEC4 Project would be approximately 0.117¢ per kWh of energy or an increase of 2.24 percent. The estimated rate impact per kWh for the twelve months ending June 30, 2017, would be approximately 0.441¢ per kWh or an increase of 8.44 percent.

2. Estimated Rate Impacts using E8760 Allocation Method

One of the alternative methods to allocate the Minnesota jurisdictional revenue requirements to class is the E8760 method. Table 4 summarizes the estimated revenue requirements and rate impacts by customer class using the E8760 method, assuming current cost recovery beginning in July 2013. For the average residential customer, the rate impact for the first twelve months of current cost recovery of the BEC4 Project would be approximately $1.24 per month or a 1.65 percent rate increase. For the twelve months ending June 30, 2017, this impact will increase to $4.66 per month or a 6.21 percent rate increase. For Large Power customers, the estimated rate impact for the first twelve months of current cost recovery of the

BEC4 Project would be approximately 0.120¢ per kWh of energy or an increase of 2.30 percent. The estimated rate impact per kWh for the twelve months ending June 30, 2017, would be approximately 0.452¢ per kWh or an increase of 8.65 percent.

3. Estimated Rate Impacts using CP Demand Allocation Method

Another alternative method to allocate the Minnesota jurisdictional revenue requirements to class is the CP Demand method. Table 5 summarizes the estimated revenue requirements and rate impacts by customer class using the CP Demand method, assuming current cost recovery beginning in July 2013. For the average residential customer, the rate impact for the first twelve months of current cost recovery of the BEC4 Project would be approximately $1.46 per month or a 1.94 percent rate increase. For the twelve months ending June 30, 2017, this impact will increase to $5.48 per month or a 7.31 percent rate increase. For Large Power customers, the estimated rate impact for the first twelve months of current cost recovery of the BEC4 Project would be approximately 0.103¢ per kWh of energy or an increase of 1.97 percent. The estimated rate impact per kWh for the twelve months ending June 30, 2017, would be approximately 0.389¢ per kWh or an increase of 7.44 percent.

Table 3--Estimated Customer Impact Using Peak and Average Method - Proposed

	Estimated Rate Impact			
12 months ending 6/30	2014	2015	2016	2017
MN Juris Rev Req.	$11,410,028	$23,320,264	$33,101,792	$43,043,722
Rate Class Impacts (**1**/)				
Residential				
Avg Current Rate (¢/kWh)	8.963	8.963	8.963	8.963
Increase (¢/kWh)	0.141	0.288	0.409	0.532
Increase (%)	1.57%	3.21%	4.56%	5.94%
Avg Impact ($/month)	$1.18	$2.41	$3.42	$4.45
General Service				
Avg Current Rate (¢/kWh)	8.957	8.957	8.957	8.957
Increase (¢/kWh)	0.134	0.273	0.388	0.504
Increase (%)	1.50%	3.05%	4.33%	5.63%
Avg Impact ($/month)	$3.74	$7.62	$10.84	$14.08
Large Light & Power				
Avg Current Rate (¢/kWh)	7.050	7.050	7.050	7.050
Increase (¢/kWh)	0.124	0.254	0.361	0.470
Increase (%)	1.76%	3.60%	5.12%	6.67%
Avg Impact ($/month)	$305.19	$625.14	$888.49	$1,156.76
Large Power				
Avg Current Rate (¢/kWh)	5.228	5.228	5.228	5.228
Increase (¢/kWh)	0.117	0.239	0.339	0.441
Increase (%)	2.24%	4.57%	6.48%	8.44%
Avg Impact ($/month)	$66,031	$134,883	$191,320	$248,885
Municipal Pumping				
Avg Current Rate (¢/kWh)	8.121	8.121	8.121	8.121
Increase (¢/kWh)	0.169	0.346	0.491	0.638
Increase (%)	2.08%	4.26%	6.05%	7.86%
Avg Impact ($/month)	$28.35	$58.04	$82.37	$107.03
Lighting				
Avg Current Rate (¢/kWh)	14.643	14.643	14.643	14.643
Increase (¢/kWh)	0.150	0.306	0.434	0.565
Increase (%)	1.02%	2.09%	2.96%	3.86%
Avg Impact ($/month)	$0.28	$0.58	$0.82	$1.07

1/ Average current rates based on Final 2010 TY General Rates in 2009 Rate Case with riders and other revenue (E015/GR-09-1151). Average $/month impact based on average 2013 budgeted monthly kWh per customer.

Table 4--Estimated Customer Impact Using E8760 Method - Alternative

	Estimated Rate Impact			
12 months ending 6/30	2014	2015	2016	2017
MN Juris Rev Req.	$11,668,092	$23,847,704	$33,850,464	$44,017,253
Rate Class Impacts (**1**/)				
Residential				
Avg Current Rate (¢/kWh)	8.963	8.963	8.963	8.963
Increase (¢/kWh)	0.148	0.302	0.428	0.557
Increase (%)	1.65%	3.37%	4.78%	6.21%
Avg Impact ($/month)	$1.24	$2.53	$3.58	$4.66
General Service				
Avg Current Rate (¢/kWh)	8.957	8.957	8.957	8.957
Increase (¢/kWh)	0.141	0.288	0.409	0.531
Increase (%)	1.57%	3.22%	4.57%	5.93%
Avg Impact ($/month)	$3.94	$8.04	$11.42	$14.83
Large Light & Power				
Avg Current Rate (¢/kWh)	7.050	7.050	7.050	7.050
Increase (¢/kWh)	0.122	0.250	0.355	0.461
Increase (%)	1.73%	3.55%	5.04%	6.54%
Avg Impact ($/month)	$300.26	$615.30	$873.72	$1,134.61
Large Power				
Avg Current Rate (¢/kWh)	5.228	5.228	5.228	5.228
Increase (¢/kWh)	0.120	0.245	0.348	0.452
Increase (%)	2.30%	4.69%	6.66%	8.65%
Avg Impact ($/month)	$67,724	$138,270	$196,399	$255,093
Municipal Pumping				
Avg Current Rate (¢/kWh)	8.121	8.121	8.121	8.121
Increase (¢/kWh)	0.170	0.347	0.493	0.641
Increase (%)	2.09%	4.27%	6.07%	7.89%
Avg Impact ($/month)	$28.52	$58.21	$82.71	$107.53
Lighting				
Avg Current Rate (¢/kWh)	14.643	14.643	14.643	14.643
Increase (¢/kWh)	0.106	0.217	0.308	0.400
Increase (%)	0.72%	1.48%	2.10%	2.73%
Avg Impact ($/month)	$0.20	$0.41	$0.58	$0.76

1/ Average current rates based on Final 2010 TY General Rates in 2009 Rate Case with riders and other revenue (E015/GR-09-1151). Average $/month impact based on average 2013 budgeted monthly kWh per customer.

Table 5--Estimated Customer Impact Using CP Demand Method - Alternative

	Estimated Rate Impact			
12 months ending 6/30	2014	2015	2016	2017
MN Juris Rev Req.	$11,410,028	$23,320,264	$33,101,792	$43,043,722
Rate Class Impacts (**1**/)				
Residential				
Avg Current Rate (¢/kWh)	8.963	8.963	8.963	8.963
Increase (¢/kWh)	0.174	0.355	0.504	0.655
Increase (%)	1.94%	3.96%	5.62%	7.31%
Avg Impact ($/month)	$1.46	$2.97	$4.21	$5.48
General Service				
Avg Current Rate (¢/kWh)	8.957	8.957	8.957	8.957
Increase (¢/kWh)	0.162	0.330	0.469	0.610
Increase (%)	1.81%	3.68%	5.24%	6.81%
Avg Impact ($/month)	$4.52	$9.22	$13.10	$17.04
Large Light & Power				
Avg Current Rate (¢/kWh)	7.050	7.050	7.050	7.050
Increase (¢/kWh)	0.145	0.296	0.421	0.547
Increase (%)	2.06%	4.20%	5.97%	7.76%
Avg Impact ($/month)	$356.87	$728.51	$1,036.16	$1,346.27
Large Power				
Avg Current Rate (¢/kWh)	5.228	5.228	5.228	5.228
Increase (¢/kWh)	0.103	0.211	0.299	0.389
Increase (%)	1.97%	4.04%	5.72%	7.44%
Avg Impact ($/month)	$58,130	$119,081	$168,745	$219,538
Municipal Pumping				
Avg Current Rate (¢/kWh)	8.121	8.121	8.121	8.121
Increase (¢/kWh)	0.180	0.368	0.522	0.679
Increase (%)	2.22%	4.53%	6.43%	8.36%
Avg Impact ($/month)	$30.20	$61.74	$87.57	$113.91
Lighting				
Avg Current Rate (¢/kWh)	14.643	14.643	14.643	14.643
Increase (¢/kWh)	0.227	0.465	0.660	0.858
Increase (%)	1.55%	3.18%	4.51%	5.86%
Avg Impact ($/month)	$0.43	$0.88	$1.25	$1.62

1/ Average current rates based on Final 2010 TY General Rates in 2009 Rate Case with riders and other revenue (E015/GR-09-1151). Average $/month impact based on average 2013 budgeted monthly kWh per customer.

IX. THE BEC4 PROJECT IS IN THE PUBLIC INTEREST

At 585 MW of net capacity, BEC4 is the newest and single largest base load generator in Minnesota Power's fleet, providing cost-effective and reliable power to Minnesota Power's customer 24 hours a day, 7 days a week. Because more than 50 percent of Minnesota Power's total energy supply is used by its 12 largest industrial customers that operate around the clock, the Company has a uniquely high load factor, requiring a power supply that is available more hours of the day than that of most electric utilities. Retrofitting BEC4 to reduce mercury emissions by 90 percent, and improving other aspects of environmental performance as requested in the Petition, is in the public interest as it will help to ensure BEC4 continues to deliver a large volume of essential, environmentally compliant energy to residents, communities and businesses in Northeastern Minnesota at a reasonable cost.

The EPA's issuance of the MATS Rule for mercury reduction and other air pollutants in December of 2011 was a key factor in the timing of submitting the BEC4 Plan Petition. With Commission approval of the Project in 2013 and the granting of a one-year extension for completion by the MPCA,[14] Minnesota Power's plan will comply with MATS within the allocated EPA timeframe. The timing of the BEC4 Project will also benefit customers in that it will allow Minnesota Power to be ahead of other utilities in securing competitive construction and material pricing, technology selection, requesting necessary outage(s) from MISO, and contracting with skilled trades to construct the Project. Under the current BEC4 Project schedule, Minnesota Power would be in compliance with MERA more than two years in advance, providing significant environmental benefits to the region well in advance of when required by Minnesota law.

Minnesota Power's long-term outlook for energy and capacity needs supports the decision to move forward with the BEC4 Project. Minnesota Power is projecting significant growth in both demand and energy over the next decade. Planned additions by large retail

[14] On January 28, 2013, the MPCA granted BEC4 a one-year extension of the compliance deadline for the MATS Rule. The extended compliance deadline is the earlier of April 16, 2016, or the date of completion of BEC4 control equipment installation, start-up and tuning.

customers and wholesale contract extensions out through 2019 keep Minnesota Power's long-term load growth projections[15] at an average 1.5 percent.[16]

Figure 1 is Minnesota Power's energy position outlook that is the starting point of its 2013 Integrated Resource Plan ("2013 IRP")[17] and the evaluation of the BEC4 project. The energy breakdown by generating source demonstrates the large role BEC4 plays in meeting the future energy requirements of customers.

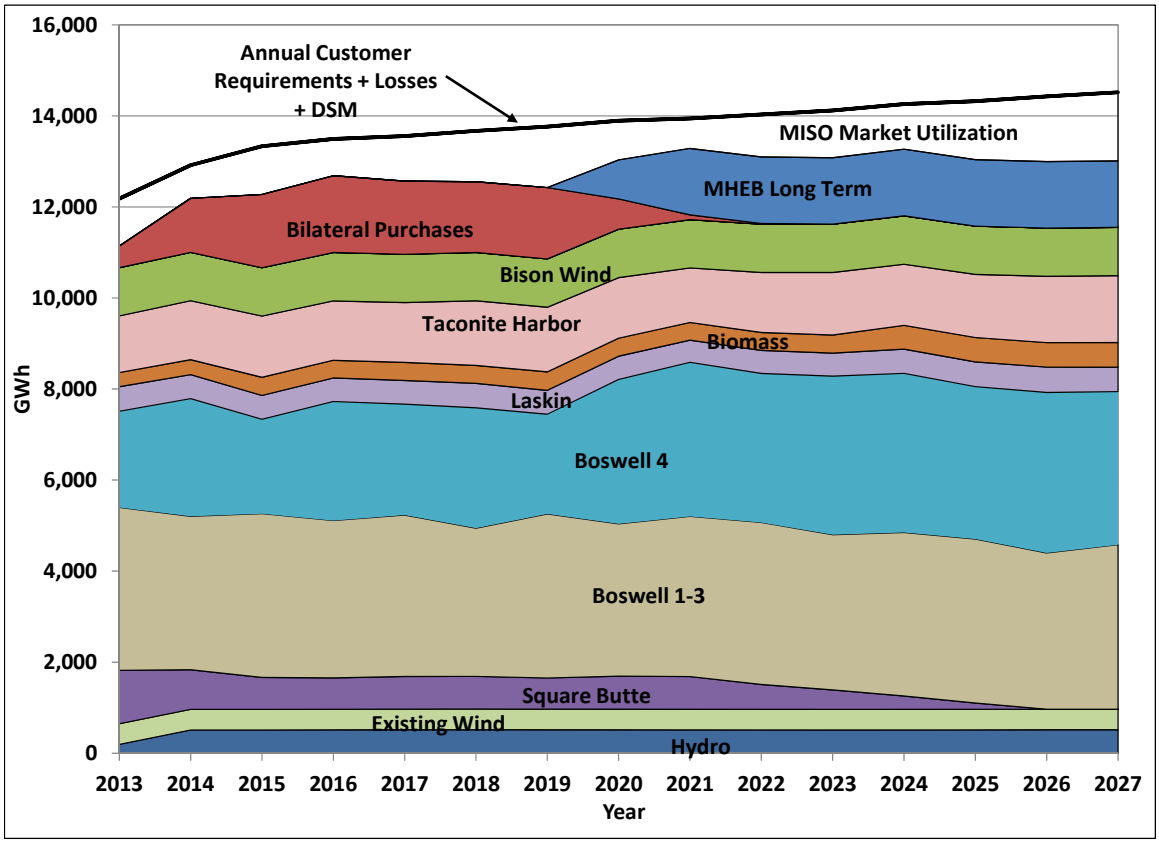

Figure 1 . Energy Outlook – Wholesale Industrial Customer Scenario

[15] Minnesota Power's June 2012 Annual Electric Utility Forecast Report ("AFR") was used for the evaluation of the BEC4 Project. The AFR contained several long-term scenarios for Minnesota Power's energy and demand requirements. The "Wholesale and Industrial Customer Addition Forecast Scenario," which contains the addition of the Essar taconite pellet facility in Nashwauk, Minnesota, was utilized as the expected outlook for the analysis.

[16] This projection also assumes that Minnesota Power continues to achieve its 1.5 percent energy conservation obligation. Beginning in 2020, Minnesota Power's system load forecast projects a more typical 1 percent system growth rate to extend the outlook to 2035.

[17] Minnesota Power filed its 2013 IRP with the Commission on March 1, 2013, in Docket No. E015/RP-13-53.

The BEC4 Plan Petition used extensive planning analysis to quantify the impact and benefit of the BEC4 Project and identified that the BEC4 Project is the lowest cost plan for customers over a wide-range of assumptions when compared to other alternatives. As part of its integrated resource planning process, the Company refreshed its base planning assumptions and is reflecting the outcomes of incorporating those base assumptions into the BEC4 Project planning analysis below. Table 6 identifies the key updates incorporated, including the most recent outlooks and information available for its resource evaluation. The updates reflected create the starting point for the evaluation that confirms the benefit to customers in pursuing the BEC4 Project.

Table 6 – Outlooks/Assumptions per Minnesota Power's 2013 IRP

Base 2013 IRP Assumptions for BEC4 Project Evaluation	Description of Update
Boswell 4 base capital and O&M projections	• Updated BEC4 revenue requirements with most recent capital, O&M and fuel outlook used in the 2013 Plan • Added BEC4 share of station fuels capital cost and fuel O&M cost to the revenue requirement
Natural gas fired alternatives	• Capital and O&M costs for the natural gas fired alternatives used to replace BEC4 in the shutdown scenario were updated to align with the 2013 IRP capital assumptions.
Wholesale market prices and fuels cost	• The projected prices for market energy, capacity, natural gas and coal were updated with Minnesota Power's current outlook utilized in the 2013 IRP.
Carbon regulation assumptions	• The carbon mid-externality value from the State Externality Docket published on June 13, 2012, under docket Nos. E-999/CI-93-583 and E-999/CI-00-1636 was utilized. • The sensitivity analysis for the BEC4 Project includes a carbon regulation penalty sensitivity at three different levels starting in 2017 - $11, $21.50 and $42 per ton. • The carbon regulation values for the sensitivities are from the 2012 Order Establishing 2012 Estimate of Future Carbon Dioxide Regulation Costs, pursuant to Minn. Stat. §216H.06,in Docket No. E-999/CI-07-1199.
Load and Capability	• Load outlook and capacity resources were updated to reflect 2013 IRP base case

As originally discussed in greater detail in Minnesota Power's BEC4 Plan Petition – Appendix A, Minnesota Power evaluated the BEC4 Project against a BEC4 shutdown scenario, as well as two possible natural gas replacement options. The BEC4 Project and the two natural gas replacement scenarios discussed in Appendix A were then stressed over a range of twenty-two planning sensitivities utilizing the updated base assumptions from the 2013 IRP. The outcomes based on refreshing the base assumptions, which are shown in Table 7, reflect that implementation of the BEC4 Project provides a decisive range ($152 million to $319 million) of financial benefits for Minnesota Power customers over the two natural gas replacement options. Thus, Minnesota Power confirmed, through inclusion of the refreshed base assumptions in the BEC4 Project resource analysis, that the BEC4 Project continues to be the most economic, lowest cost plan for customers when compared to other alternatives.

Table 7 –BEC4 Project Evaluation with 2013 IRP Assumptions

Table shows the increase/decrease in costs when the BEC4 Project is replaced with the natural gas resources in Replacement Option 1 or 2	With the Energy Market Outlook				
	*Power Supply Costs/ the BEC4 Project	Change in Cost with the "Direct Replacement" Option Additional Cost (Less Cost)		Change in Cost with the "Ownership Share Replacement" Option Additional Cost (Less Cost)	
Base	$8,146,768	$319,167	4%	$152,436	2%
High Capital Cost	$8,226,881	$444,275	5%	$246,069	3%
Low Capital Cost	$8,067,112	$193,610	2%	$58,339	1%
CO2 $9 Start in 2017	$8,705,977	$213,863	2%	$40,773	0%
CO2 $21.50 Start in 2017	$9,749,671	$11,610	0%	($178,278)	-2%
CO2 $34 Start in 2017	$10,773,657	($185,034)	-2%	($393,893)	-4%
CO2-$0	$7,863,376	$364,170	5%	$197,025	3%
High Coal Forecast	$8,854,218	$120,664	1%	($50,272)	-1%
Low Coal Forecast	$7,418,759	$502,274	7%	$335,517	5%
High Externality Values	$8,400,249	$280,501	3%	$113,491	1%
Low Externality Values	$7,893,486	$357,812	5%	$191,361	2%
Plus 50% Natural Gas Forecast	$8,256,419	$604,502	7%	$445,011	5%
Plus 25% Natural Gas Forecast	$8,200,933	$482,805	6%	$322,704	4%
Minus 25% Natural Gas Forecast	$8,103,083	$111,985	1%	($67,801)	-1%
Minus 50% Natural Gas Forecast	$8,071,580	($120,698)	-1%	($314,555)	-4%
High Load Forecast	$8,416,409	$310,455	4%	$142,950	2%
Low Load Forecast	$7,121,852	$288,935	4%	$130,879	2%
Plus 50% Wholesale Mkt Forecast	$8,511,438	$310,881	4%	$114,230	1%
Minus 50% Wholesale Mkt Forecast	$7,729,971	$239,445	3%	$93,914	1%
DSM AC Program	$8,159,000	$318,991	4%	$152,586	2%
Additional Environmental Regulations	$8,229,251	$236,684	3%	$69,953	1%
No Wholesale Mkt	$8,661,920	$384,531	4%	$87,711	1%
No Wholesale Mkt w/ CO2 $21.50 Start in 201	$10,291,015	$32,711	0%	($279,097)	-3%

* Power supply costs modeled in Strategist for the 2013-2034 study period

- Dollar amounts are shown in thousands and represent the present value of power supply cost in 2013 dollars over the study period

When considering the natural gas options discussed in Appendix A, particularly the larger 800 MW combined cycle generation option, it is important to note that each of the gas alternatives would require complex construction and/or procurement of a combined cycle resource to occur to retire and replace BEC4. Typical construction lead times for building a new combined cycle natural gas plant would require a minimum of four years and uncertainty in regulatory and environmental approvals.

Also, while the carbon regulation penalty sensitivities shown in Table 7 identify that if additional costs are placed on existing generation for greenhouse gas emissions starting as early as 2017, there could be benefit to procuring a portion of a large 800 MW combined cycle generation facility; Minnesota Power does not expect greenhouse gas regulation policy implementation as a likely scenario within the planning period. In general, action by the Company in the near term to protect against the chance of extremely low natural gas prices or a mid to high carbon regulation penalty would lead to implementation of a suboptimal plan and unnecessarily increase costs for Minnesota Power's customers. Thus, due to the short timeframe combined with the power supply cost savings that retaining BEC4 as an environmentally compliant resource brings to customers, replacement of BEC4 with a natural gas project build is not a reasonable option for Minnesota Power's customers.

As well, repowering BEC4 on natural gas is not a viable/cost effective option for Minnesota Power customers. Because BEC4 is the largest and most efficient baseload resource in Minnesota Power's fleet, it provides significant amounts of low cost energy each day to support the energy needs of our heavily industrial customer base. Refueling BEC4 to natural gas would increase energy costs for BEC4, as natural gas is a more expensive fuel than coal. This would reduce the competitiveness of BEC4 within MISO. BEC4 would run far less on an annual basis and customer energy costs would increase as Minnesota Power would need to procure energy from the regional market at a higher cost than that of BEC4 as a coal fired resource. The increase in customer costs due to exposure to regional markets at higher cost levels makes refueling BEC4 to natural gas not a viable alternative for a competitive power supply.

By proactively managing the research, design, engineering and procurement of the BEC4 Project, Minnesota Power will be able to deliver an on-time, cost-effective multi-pollutant solution. The proposed multi-pollution solution CDS technology has proven performance when installed on utility scale projects and has several maintenance cost and environmental advantages

over other FGD systems. Advantages include: generally low maintenance due to its simple system; increased equipment reliability due to the elimination of parts that require frequent maintenance which are found in typical wet FGD system; no liquid waste stream; and water streams from BEC that need to be treated may be used in the CDS, therefore reducing or eliminating the need for water disposal and treatment.

The Company will utilize its purchasing procedures to obtain competitive quotations for major purchases and award contracts to bidder(s) based on the best overall economic value for its customers, secure a majority of the total cost of the BEC4 Project in fixed fee/lump sum contracts that are competitively bid, implement measures to minimize changes in construction contract values, work with contractors who have demonstrated competence in bidding, managing and implementing utility construction and are genuinely interested in securing repeat business, and supplement its internal construction management team with a team from an external engineering/construction management company to provide additional support and expertise.

Minnesota Power will also utilize its effective project governance and quality assurance/quality control programs by assigning qualified employees to inspect and monitor construction quality on the job site including an on-site construction manager responsible for quality control and administration of the construction contracts. Minnesota Power also plans to supplement its internal construction management team with a team from an external engineering/construction management company that will provide additional support and expertise in managing the construction of a project the magnitude of the BEC4 Project.

Based on the information as discussed in Minnesota Power's BEC4 Plan Petition, as well as confirming the customer benefit of the project through the incorporation of the 2013 IRP base assumptions, Minnesota Power is confident that moving forward with the BEC4 Project is in the best interest of its customers. The BEC4 Project remains an economic, cost-effective method for meeting customer energy needs and it allows BEC4 to remain a low cost and reliable generation asset capable of meeting the demands of Minnesota Power's system safely and reliably.

X. CONCLUSION

Minnesota Power respectfully requests that the Commission approve the BEC4 Rider to recover the investments and expenditures associated with the BEC4 Project. BEC4 is and will continue to be an essential component of Minnesota Power's long-term resource strategy, especially with significant growth projected in customer energy and demand requirements over the next decade. The BEC4 Project is an appropriate investment on behalf of Minnesota Power's customers that will reduce mercury emissions, provide a multi-pollutant solution to meet MATS and other existing and pending state and federal environmental regulations and significantly reduce wastewater production from BEC4. The timing of the BEC4 Project will allow Minnesota Power will comply with MATS within the allocated EPA timeframe, as well as be in compliance with MERA more than two years in advance, providing significant environmental benefits to the region well in advance of when required by Minnesota law.

Additionally, the BEC4 Project also benefit customers in that it will allow Minnesota Power to get ahead of other utilities in securing competitive pricing, technology selection, requesting necessary outage(s) from MISO, and contracting with skilled trades to construct the Project. The BEC4 Project is a cost-effective plan to help ensure BEC4 continues to meet customer resource needs safely and reliably.

Dated: March 7, 2013

Respectfully submitted,

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MINNESOTA POWER **SECTION** V **PAGE NO.** 93
ELECTRIC RATE BOOK - VOLUME I **REVISION** Original

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:

Rate Class	**Boswell 4 Plan Adjustment**
Residential	0.000¢/kWh
General Service	0.000¢/kWh
Large Light & Power	0.000¢/kWh
Municipal Pumping	0.000¢/kWh
Lighting	0.000¢/kWh
Large Power	$0.00 per kW-month of Billing Demand and 0.000¢/kWh

Filing Date March 7, 2013 **MPUC Docket No.** E015/M-12-920
Effective Date **Order Date**

Approved by: M. Podratz
M. Podratz
Director - Rates

Minnesota Power
Rider for BEC4 Emission Reduction
Summary: Revenue Requirements, Cost Allocation and Rate Design

Total Net Revenue Requirements ($)		6/30/14	6/30/15	6/30/16	6/30/17
Boswell 4 Environmental		13,902,925	28,377,978	40,142,482	50,657,312
Boswell Ash Pond Phase 1		8,860	55,473	217,190	1,821,564
Boswell Ash Pond Phase 2		-	-	-	2,587
Boswell Ash Pond Phase 3		-	-	-	-
Boswell Ash Pond Phase 4		-	-	-	-
Boswell Ash Pond Phase 5		-	-	-	-
Total		13,911,785	28,433,451	40,359,672	52,481,464
MN Jurisdictional & Class Revenue Requirements ($) 1/					
Residential	11.259%	1,566,328	3,201,322	4,544,095	5,908,888
General Service	6.213%	864,339	1,766,570	2,507,546	3,260,673
Large Light & Power	12.471%	1,734,939	3,545,936	5,033,255	6,544,963
Large Power	51.269%	7,132,433	14,577,546	20,692,000	26,906,722
Municipal Pumping	0.568%	79,019	161,502	229,243	298,095
Lighting	0.237%	32,971	67,387	95,652	124,381
Total MN Jurisdiction	82.017%	11,410,028	23,320,264	33,101,792	43,043,722
Billing Units 2/					
Residential	kWh	1,111,583,000	1,111,583,000	1,111,583,000	1,111,583,000
General Service	kWh	646,826,000	646,826,000	646,826,000	646,826,000
Large Light & Power	kWh	1,394,017,000	1,394,017,000	1,394,017,000	1,394,017,000
Large Power	kW-month	728,746	728,746	728,746	728,746
	kWh	6,095,150,000	6,095,150,000	6,095,150,000	6,095,150,000
Municipal Pumping	kWh	46,704,000	46,704,000	46,704,000	46,704,000
Lighting	kWh	22,020,000	22,020,000	22,020,000	22,020,000
Estimated Billing Factors 3/		7/1/2013	7/1/2014	7/1/2015	7/1/2016
Residential	¢/kWh	0.141	0.288	0.409	0.532
General Service	¢/kWh	0.134	0.273	0.388	0.504
Large Light & Power	¢/kWh	0.124	0.254	0.361	0.470
Large Power	$/kW - month	0.49	1.00	1.42	1.85
	¢/kWh	0.047	0.096	0.136	0.177
Municipal Pumping	¢/kWh	0.169	0.346	0.491	0.638
Lighting	¢/kWh	0.150	0.306	0.434	0.565

Notes:
1/Jurisdictional Power Supply Production Demand (D-01) allocator and Peak & Average (P&A) class allocators from 2009 MPUC rate case, Docket No. E-015/GR-09-1151. Refer to Exhibit B-6, line 11.
2/ 2013 Budget.
3/ 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
Rider for BEC4 Emission Reduction
Revenue Requirements for Boswell 4 Environmental Retrofit Project

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Boswell 4 Environmental
Project # 103698

In Service 12/31/2015	12-months ending 6/30/11	6/30/12	6/30/13	6/30/14	6/30/15	6/30/16	6/30/17
Total Additions						336,420,529	
Less Net Retirements 1/						(17,100,277)	
Plant in Service						319,320,252	319,320,252
Less Accumulated Depreciation	-	-	-	-	-	(7,983,006)	(23,949,019)
Net Plant	-	-	-	-	-	311,337,246	295,371,234
CWIP	6,824,003	10,772,980	61,057,857	181,308,145	278,795,281		
Accumulated Deferred Income Taxes						(4,354,108)	(12,882,136)
Total Rate Base	6,824,003	10,772,980	61,057,857	181,308,145	278,795,281	306,983,138	282,489,098
Average Rate Base	3,412,002	8,798,492	35,915,419	121,183,001	230,051,713	292,889,210	294,736,118
Tax Depreciation Rate 2/						5.796%	11.456%
Tax Depreciation Expense						18,507,802	36,580,051
Book Depreciation Rate (24 yrs remaining 2012)						5.00%	5.00%
Book Depreciation Expense						7,983,006	15,966,013
Depreciation Expense Difference						10,524,796	20,614,038
Income Tax Rate /3						41.37%	41.37%
Deferred Tax Expense						4,354,108	8,528,028
Revenue Requirements							
Current Return on CWIP 4/				13,902,925	29,454,350	18,568,293	-
Return on Average Rate Base 4/							
After Tax Return on Equity						8,251,187	16,606,435
Income Tax Component						5,822,140	11,717,706
Interest Expense Component						3,719,693	7,486,297
Total Return on Average Rate Base						17,793,019	35,810,438
Operation & Maintenance Expense						5,334,912	10,829,871
Depreciation Expense						7,983,006	15,966,013
Property Tax 5/				-	-	-	-
Annual Revenue Requirements				13,902,925	29,454,350	49,679,231	62,606,322
Revenue Credit for Basin's Share 6/							
Current Return on CWIP							
Return on Average Rate Base							
Operation & Maintenance Expense							
Depreciation Expense							
Property Tax 5/							
Annual Revenue Credit							
Total Net Revenue Requirements				13,902,925	28,377,978	40,142,482	50,657,312

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1/ Total Accumulated Cost of Retirements $39,958,395 less Allocated Reserve $22,858,118 = $17,100,277
2/ Weighted average tax rate provided by Tax Department. Based on IRS guidelines - 40% weighting based on 20 yr tax life; 60% based on 84 months straight line. Refer to Exhibit B-7.
3/ Minnesota Composite Income Tax Rate.
4/ Current Retail Return on CWIP starts 7/1/13 (Avg. Monthly CWIP x ROR% / 12). Refer to Exhibit B-3. Return on average rate base begins 1/1/15 (Avg Rate Base x ROR% / 12).
Minnesota Power's pre-tax rate of return is 12.15% from 2009 MPUC rate case, Docket No. E-015/GR-09-1151. Refer to Exhibit B-4.
5/ Project assumed to qualify for 100% property tax pollution control exemption per Tax Department.

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Boswell Ash Pond
Project #106072 Phase 1

In Service 12/31/2016	12-months ending 6/30/13	6/30/14	6/30/15	6/30/16	6/30/17
Plant in Service					4,642,109
Less Accumulated Depreciation	-	-	-	-	(122,161)
Net Plant	-	-	-	-	4,519,948
CWIP	30,678	187,021	1,100,336	3,387,052	
Accumulated Deferred Income Taxes					(60,771)
Total Rate Base	30,678	187,021	1,100,336	3,387,052	4,459,177
Average Rate Base	15,339	108,850	643,679	2,243,694	3,923,114
Tax Depreciation Rate 1/					5.796%
Tax Depreciation Expense					269,057
Book Depreciation Rate (24 yrs remaining 2012)					5.26%
Book Depreciation Expense					122,161
Depreciation Expense Difference					146,896
Income Tax Rate 2/					41.37%
Deferred Tax Expense					60,771
Revenue Requirements					
Current Return on CWIP 3/		8,860	59,271	269,407	243,886
Return on Average Rate Base 3/					
After Tax Return on Equity					110,521
Income Tax Component					77,985
Interest Expense Component					49,824
Total Return on Average Rate Base					238,329
Operation & Maintenance Expense /4					1,640,000
Depreciation Expense					122,161
Property Tax 5/		-	-	-	-
Annual Revenue Requirements		8,860	59,271	269,407	2,244,376
Revenue Credit for Basin's Share /6		[redacted]			
Current Return on CWIP					
Return on Average Rate Base					
Operation & Maintenance Expense					
Depreciation Expense					
Property Tax 4/					
Annual Revenue Credit					
Total Net Revenue Requirements		8,860	55,473	217,190	1,821,564

[TRADE SECRET DATA HAS BEEN EXCISED]

1/ Weighted average tax rate provided by Tax Department. Based on IRS guidelines - 40% weighting based on 20 yr tax life; 60% based on 84 months striaght line. Refer to Exhibit B-7.
2/ Minnesota Composite Income Tax Rate.
3/ Current Retail Return on CWIP starts 7/1/13 (Avg. Monthly CWIP x ROR% / 12). Refer to Exhbit B-3. Return on average rate base begins 1/1/15 (Avg Rate Base x ROR% / 12).
Minnesota Power's pre-tax rate of return is 12.15% from 2009 MPUC rate case, Docket No. E-015/GR-09-1151. Refer to Exhibit B-4
4/ O&M expenses for all Ash Pond Phases are included in Phase 1 revenue requirements.
5/ Project Assumed to qualify for 100% property tax pollution control exemption per Tax Department.

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Boswell Ash Pond
Project #106072 Phase 2

	12-months ending 6/30/17
In Service 12/31/2020	
Plant in Service	
Less Accumulated Depreciation	-
Net Plant	-
CWIP	105,658
Accumulated Deferred Income Taxes	
Total Rate Base	105,658
Average Rate Base	52,829
Tax Depreciation Rate 1/	
Tax Depreciation Expense	
Book Depreciation Rate (24 yrs remaining 2012)	
Book Depreciation Expense	
Depreciation Expense Difference	
Income Tax Rate 2/	
Deferred Tax Expense	
Revenue Requirements	
Current Return on CWIP 3/	3,209
Return on Average Rate Base 3/	
After Tax Return on Equity	
Income Tax Component	
Interest Expense Component	
Total Return on Average Rate Base	
Operation & Maintenance Expense 4/	
Depreciation Expense	
Property Tax 5/	-
Annual Revenue Requirements	3,209
Revenue Credit for Basin's Share /6	[redacted] [TRADE SECRET DATA HAS BEEN EXCISED]
Current Return on CWIP	
Return on Average Rate Base	
Operation & Maintenance Expense	
Depreciation Expense	
Property Tax 4/	
Annual Revenue Credit	
Total Net Revenue Requirements	2,587

1/ Weighted average tax rate provided by Tax Department. Based on IRS guidelines - 40% weighting based on 20 yr tax life; 60% based on 84 months striaght line. Refer to Exhibit B-7.
2/ Minnesota Composite Income Tax Rate.
3/ Current Retail Return on CWIP starts 7/1/13 (Avg. Monthly CWIP x ROR% / 12). Refer to Exhbit B-3. Return on average rate base begins 1/1/15 (Avg Rate Base x ROR% / 12).
Minnesota Power's pre-tax rate of return is 12.15% from 2009 MPUC rate case, Docket No. E-015/GR-09-1151. Refer to Exhibit B-4
4/ O&M expenses for all Ash Pond Phases are included in Phase 1 revenue requirements.
5/ Project Assumed to qualify for 100% property tax pollution control exemption per Tax Department.

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Minnesota Power
BEC4 Project and Ash Pond Phases 1 and 2
Plant Additions, AFUDC and Return on CWIP

	Total	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08
BEC 4 Environmental	336,420,529												
In Service 12/31/2015													
BOM		0	0	0	2,456	23,029	23,029	30,424	163,233	537,238	539,414	753,575	802,343
CapEx	332,630,500			2,456	20,573	0	7,395	132,809	374,005	2,176	214,161	48,768	125,179
AFUDC	3,790,029			0	0	0	0	0	0	0	0	0	0
EOM		0	0	2,456	23,029	23,029	30,424	163,233	537,238	539,414	753,575	802,343	927,522
Return on CWIP													
After Tax Return on Equity													
Income Tax Component													
Interest Expense Component													
Total Return on CWIP													
Boswell Ash Pond PH 1	4,642,109												
12/31/2016													
BOM		0	0	0	0	0	0	0	0	0	0	0	0
CapEx	4,641,431												0
AFUDC	678												
EOM		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													
Boswell Ash Pond PH 2	2,006,781												
12/31/2020													
BOM		0	0	0	0	0	0	0	0	0	0	0	0
CapEx	2,006,781												
AFUDC	0												
EOM		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													
Sub-Total	343,069,419												
BOM		0	0	0	2,456	23,029	23,029	30,424	163,233	537,238	539,414	753,575	802,343
CapEx	339,278,712	0	0	2,456	20,573	0	7,395	132,809	374,005	2,176	214,161	48,768	125,179
AFUDC	3,790,707	0	0	0	0	0	0	0	0	0	0	0	0
EOM		0	0	2,456	23,029	23,029	30,424	163,233	537,238	539,414	753,575	802,343	927,522
Return on CWIP													
After Tax Return on Equity		0	0	0	0	0	0	0	0	0	0	0	0
Income Tax Component		0	0	0	0	0	0	0	0	0	0	0	0
Interest Expense Component		0	0	0	0	0	0	0	0	0	0	0	0
Total Return on CWIP		0	0	0	0	0	0	0	0	0	0	0	0

Basin's Return on CWIP
BEC 4 Environmental
Boswell Ash Pond PH 1
Boswell Ash Pond PH 2

1/ Capital and AFDC per Property Accounting.
2/ Assumes return on CWIP starts 7/1/2013 after expected MPUC approval in June 2013.
3/ Pre-tax ROR of 12.15% per last rate case E-015/GR-09-1151. Refer to Exhibit B-4.

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[TRADE SECRET DATA HAS BEEN EXCISED]

Minnesota Power
BEC4 Project and Ash Pond Phases 1 and 2
Plant Additions, AFUDC and Return on CWIP

	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
BEC 4 Environmental												
In Service 12/31/2015												
BOM	927,522	963,561	1,005,178	1,163,785	1,308,296	1,405,257	1,826,269	1,997,995	2,202,663	2,703,471	3,565,308	3,878,829
CapEx	29,245	35,602	152,013	137,025	88,778	411,041	159,993	191,849	485,898	842,826	291,012	359,913
AFUDC	6,794	6,015	6,594	7,486	8,183	9,971	11,733	12,819	14,910	19,011	22,510	25,174
EOM	963,561	1,005,178	1,163,785	1,308,296	1,405,257	1,826,269	1,997,995	2,202,663	2,703,471	3,565,308	3,878,829	4,263,917
Return on CWIP												
After Tax Return on Equity												
Income Tax Component												
Interest Expense Component												
Total Return on CWIP												
Boswell Ash Pond PH 1												
12/31/2016												
BOM	0	0	0	0	0	0	0	0	0	0	0	0
CapEx	0	0	0									
AFUDC												
EOM	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												
Boswell Ash Pond PH 2												
12/31/2020												
BOM	0	0	0	0	0	0	0	0	0	0	0	0
CapEx												
AFUDC												
EOM	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												
Sub-Total												
BOM	927,522	963,561	1,005,178	1,163,785	1,308,296	1,405,257	1,826,269	1,997,995	2,202,663	2,703,471	3,565,308	3,878,829
CapEx	29,245	35,602	152,013	137,025	88,778	411,041	159,993	191,849	485,898	842,826	291,012	359,913
AFUDC	6,794	6,015	6,594	7,486	8,183	9,971	11,733	12,819	14,910	19,011	22,510	25,174
EOM	963,561	1,005,178	1,163,785	1,308,296	1,405,257	1,826,269	1,997,995	2,202,663	2,703,471	3,565,308	3,878,829	4,263,917
Return on CWIP												
After Tax Return on Equity	0	0	0	0	0	0	0	0	0	0	0	0
Income Tax Component	0	0	0	0	0	0	0	0	0	0	0	0
Interest Expense Component	0	0	0	0	0	0	0	0	0	0	0	0
Total Return on CWIP	0	0	0	0	0	0	0	0	0	0	0	0

Basin's Return on CWIP
BEC 4 Environmental
Boswell Ash Pond PH 1
Boswell Ash Pond PH 2

Minnesota Power
BEC4 Project and Ash Pond Phases 1 and 2
Plant Additions, AFUDC and Return on CWIP

	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10
BEC 4 Environmental												
In Service 12/31/2015												
BOM	4,263,917	4,492,518	5,039,893	5,603,693	5,910,403	6,017,189	6,080,401	6,200,186	6,286,017	6,404,898	6,416,636	6,468,754
CapEx	202,710	519,447	532,761	273,286	72,340	27,238	83,484	49,138	81,801	-25,509	14,902	29,509
AFUDC	25,892	27,928	31,040	33,424	34,446	35,974	36,301	36,693	37,081	37,247	37,216	38,877
EOM	4,492,518	5,039,893	5,603,693	5,910,403	6,017,189	6,080,401	6,200,186	6,286,017	6,404,898	6,416,636	6,468,754	6,537,140
Return on CWIP												
After Tax Return on Equity												
Income Tax Component												
Interest Expense Component												
Total Return on CWIP												
Boswell Ash Pond PH 1												
12/31/2016												
BOM	0	0	0	0	0	0	0	0	0	0	0	0
CapEx												
AFUDC												
EOM	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												
Boswell Ash Pond PH 2												
12/31/2020												
BOM	0	0	0	0	0	0	0	0	0	0	0	0
CapEx												
AFUDC												
EOM	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												
Sub-Total												
BOM	4,263,917	4,492,518	5,039,893	5,603,693	5,910,403	6,017,189	6,080,401	6,200,186	6,286,017	6,404,898	6,416,636	6,468,754
CapEx	202,710	519,447	532,761	273,286	72,340	27,238	83,484	49,138	81,801	-25,509	14,902	29,509
AFUDC	25,892	27,928	31,040	33,424	34,446	35,974	36,301	36,693	37,081	37,247	37,216	38,877
EOM	4,492,518	5,039,893	5,603,693	5,910,403	6,017,189	6,080,401	6,200,186	6,286,017	6,404,898	6,416,636	6,468,754	6,537,140
Return on CWIP												
After Tax Return on Equity	0	0	0	0	0	0	0	0	0	0	0	0
Income Tax Component	0	0	0	0	0	0	0	0	0	0	0	0
Interest Expense Component	0	0	0	0	0	0	0	0	0	0	0	0
Total Return on CWIP	0	0	0	0	0	0	0	0	0	0	0	0

Basin's Return on CWIP
BEC 4 Environmental
Boswell Ash Pond PH 1
Boswell Ash Pond PH 2

Minnesota Power
BEC4 Project and Ash Pond Phases 1 and 2
Plant Additions, AFUDC and Return on CWIP

	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11
BEC 4 Environmental												
In Service 12/31/2015												
BOM	6,537,140	6,572,493	6,609,418	6,647,494	6,683,219	6,722,925	6,824,003	6,878,877	6,979,266	7,036,673	7,122,794	7,283,968
CapEx	0	1,568	2,707	349	4,317	64,037	17,614	62,912	19,710	48,241	122,834	50,311
AFUDC	35,353	35,357	35,369	35,377	35,389	37,041	37,260	37,476	37,698	37,880	38,339	40,366
EOM	6,572,493	6,609,418	6,647,494	6,683,219	6,722,925	6,824,003	6,878,877	6,979,266	7,036,673	7,122,794	7,283,968	7,374,644
Return on CWIP												
After Tax Return on Equity												
Income Tax Component												
Interest Expense Component												
Total Return on CWIP												
Boswell Ash Pond PH 1												
12/31/2016												
BOM	0	0	0	0	0	0	0	0	0	0	0	0
CapEx												
AFUDC												
EOM	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												
Boswell Ash Pond PH 2												
12/31/2020												
BOM	0	0	0	0	0	0	0	0	0	0	0	0
CapEx												
AFUDC												
EOM	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												
Sub-Total												
BOM	6,537,140	6,572,493	6,609,418	6,647,494	6,683,219	6,722,925	6,824,003	6,878,877	6,979,266	7,036,673	7,122,794	7,283,968
CapEx	0	1,568	2,707	349	4,317	64,037	17,614	62,912	19,710	48,241	122,834	50,311
AFUDC	35,353	35,357	35,369	35,377	35,389	37,041	37,260	37,476	37,698	37,880	38,339	40,366
EOM	6,572,493	6,609,418	6,647,494	6,683,219	6,722,925	6,824,003	6,878,877	6,979,266	7,036,673	7,122,794	7,283,968	7,374,644
Return on CWIP												
After Tax Return on Equity	0	0	0	0	0	0	0	0	0	0	0	0
Income Tax Component	0	0	0	0	0	0	0	0	0	0	0	0
Interest Expense Component	0	0	0	0	0	0	0	0	0	0	0	0
Total Return on CWIP	0	0	0	0	0	0	0	0	0	0	0	0

Basin's Return on CWIP
BEC 4 Environmental
Boswell Ash Pond PH 1
Boswell Ash Pond PH 2

Minnesota Power
BEC4 Project and Ash Pond Phases 1 and 2
Plant Additions, AFUDC and Return on CWIP

	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
BEC 4 Environmental												
In Service 12/31/2015												
BOM	7,374,644	7,439,506	7,855,289	10,101,255	10,305,289	10,539,357	10,772,980	11,046,061	12,685,535	15,512,065	19,079,496	22,086,562
CapEx	11,184	360,801	2,190,957	134,096	163,048	159,048	197,208	1,557,208	2,728,648	3,447,048	2,863,688	3,368,648
AFUDC	53,678	54,983	55,009	69,937	71,020	74,575	75,873	82,266	97,882	120,384	143,377	170,310
EOM	7,439,506	7,855,289	10,101,255	10,305,289	10,539,357	10,772,980	11,046,061	12,685,535	15,512,065	19,079,496	22,086,562	25,625,520
Return on CWIP												
After Tax Return on Equity												
Income Tax Component												
Interest Expense Component												
Total Return on CWIP												
Boswell Ash Pond PH 1												
12/31/2016												
BOM	0	0	0	0	0	0	0	0	0	0	0	0
CapEx												
AFUDC												
EOM	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												
Boswell Ash Pond PH 2												
12/31/2020												
BOM	0	0	0	0	0	0	0	0	0	0	0	0
CapEx												
AFUDC												
EOM	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												
Sub-Total												
BOM	7,374,644	7,439,506	7,855,289	10,101,255	10,305,289	10,539,357	10,772,980	11,046,061	12,685,535	15,512,065	19,079,496	22,086,562
CapEx	11,184	360,801	2,190,957	134,096	163,048	159,048	197,208	1,557,208	2,728,648	3,447,048	2,863,688	3,368,648
AFUDC	53,678	54,983	55,009	69,937	71,020	74,575	75,873	82,266	97,882	120,384	143,377	170,310
EOM	7,439,506	7,855,289	10,101,255	10,305,289	10,539,357	10,772,980	11,046,061	12,685,535	15,512,065	19,079,496	22,086,562	25,625,520
Return on CWIP												
After Tax Return on Equity	0	0	0	0	0	0	0	0	0	0	0	0
Income Tax Component	0	0	0	0	0	0	0	0	0	0	0	0
Interest Expense Component	0	0	0	0	0	0	0	0	0	0	0	0
Total Return on CWIP	0	0	0	0	0	0	0	0	0	0	0	0

Basin's Return on CWIP
BEC 4 Environmental
Boswell Ash Pond PH 1
Boswell Ash Pond PH 2

Minnesota Power
BEC4 Project and Ash Pond Phases 1 and 2
Plant Additions, AFUDC and Return on CWIP

	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13 Start Return on CWIP	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13
BEC 4 Environmental												
In Service 12/31/2015												
BOM	25,625,520	27,098,197	28,741,069	37,461,119	45,521,731	53,436,494	61,057,857	70,657,937	80,098,017	84,342,097	88,580,577	104,659,057
CapEx	1,280,080	1,440,080	8,480,080	7,760,080	7,557,424	7,200,080	9,600,080	9,440,080	4,244,080	4,238,480	16,078,480	14,032,080
AFUDC	192,597	202,792	239,970	300,533	357,339	421,284	0	0	0	0	0	0
EOM	27,098,197	28,741,069	37,461,119	45,521,731	53,436,494	61,057,857	70,657,937	80,098,017	84,342,097	88,580,577	104,659,057	118,691,137
Return on CWIP												
After Tax Return on Equity							309,221	353,921	386,046	405,960	453,657	524,346
Income Tax Component							218,191	249,731	272,399	286,451	320,106	369,985
Interest Expense Component							139,399	159,550	174,032	183,010	204,512	236,379
Total Return on CWIP							666,811	763,202	832,478	875,421	978,276	1,130,710
Boswell Ash Pond PH 1												
12/31/2016												
BOM	0	5,019	10,075	15,169	20,300	25,468	30,678	35,678	40,678	45,678	50,678	55,678
CapEx	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
AFUDC	19	56	94	131	169	209	0	0	0	0	0	0
EOM	5,019	10,075	15,169	20,300	25,468	30,678	35,678	40,678	45,678	50,678	55,678	60,678
Return on CWIP												
After Tax Return on Equity							156	179	203	226	250	273
Income Tax Component							110	126	143	160	176	193
Interest Expense Component							70	81	91	102	113	123
Total Return on CWIP							336	387	437	488	538	589
Boswell Ash Pond PH 2												
12/31/2020												
BOM	0	0	0	0	0	0	0	0	0	0	0	0
CapEx												
AFUDC												
EOM	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												
Sub-Total												
BOM	25,625,520	27,103,216	28,751,144	37,476,287	45,542,031	53,461,962	61,088,535	70,693,615	80,138,695	84,387,775	88,631,255	104,714,735
CapEx	1,285,080	1,445,080	8,485,080	7,765,080	7,562,424	7,205,080	9,605,080	9,445,080	4,249,080	4,243,480	16,083,480	14,037,080
AFUDC	192,616	202,848	240,063	300,664	357,507	421,493	0	0	0	0	0	0
EOM	27,103,216	28,751,144	37,476,287	45,542,031	53,461,962	61,088,535	70,693,615	80,138,695	84,387,775	88,631,255	104,714,735	118,751,815
Return on CWIP												
After Tax Return on Equity	0	0	0	0	0	0	309,377	354,100	386,249	406,187	453,907	524,619
Income Tax Component	0	0	0	0	0	0	218,300	249,857	272,542	286,610	320,282	370,178
Interest Expense Component	0	0	0	0	0	0	139,469	159,631	174,124	183,112	204,625	236,502
Total Return on CWIP	0	0	0	0	0	0	667,147	763,589	832,915	875,909	978,814	1,131,299

Basin's Return on CWIP
BEC 4 Environmental
Boswell Ash Pond PH 1
Boswell Ash Pond PH 2

Minnesota Power
BEC4 Project and Ash Pond Phases 1 and 2
Plant Additions, AFUDC and Return on CWIP

	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14
BEC 4 Environmental												
In Service 12/31/2015												
BOM	118,691,137	122,001,945	127,740,945	139,732,745	151,724,545	163,716,345	181,308,145	196,499,945	209,338,465	221,330,265	233,322,065	242,311,065
CapEx	3,310,808	5,739,000	11,991,800	11,991,800	11,991,800	17,591,800	15,191,800	12,838,520	11,991,800	11,991,800	8,989,000	8,871,800
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0
EOM	122,001,945	127,740,945	139,732,745	151,724,545	163,716,345	181,308,145	196,499,945	209,338,465	221,330,265	233,322,065	242,311,065	251,182,865
Return on CWIP												
After Tax Return on Equity	565,061	586,307	627,932	684,237	740,542	809,994	886,958	952,763	1,011,056	1,067,361	1,116,616	1,158,547
Income Tax Component	398,714	413,705	443,077	482,806	522,536	571,542	625,849	672,281	713,414	753,143	787,898	817,485
Interest Expense Component	254,734	264,311	283,076	308,459	333,842	365,151	399,847	429,512	455,791	481,174	503,378	522,281
Total Return on CWIP	1,218,509	1,264,323	1,354,086	1,475,503	1,596,920	1,746,686	1,912,653	2,054,557	2,180,260	2,301,677	2,407,893	2,498,313
Boswell Ash Pond PH 1												
12/31/2016												
BOM	60,678	70,773	72,183	73,592	111,402	149,212	187,021	224,831	262,640	300,450	301,860	303,269
CapEx	10,095	1,410	1,410	37,810	37,810	37,810	37,810	37,810	37,810	1,410	1,410	1,410
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0
EOM	70,773	72,183	73,592	111,402	149,212	187,021	224,831	262,640	300,450	301,860	303,269	304,679
Return on CWIP												
After Tax Return on Equity	309	336	342	434	612	789	967	1,144	1,322	1,414	1,421	1,427
Income Tax Component	218	237	241	306	432	557	682	808	933	998	1,002	1,007
Interest Expense Component	139	151	154	196	276	356	436	516	596	637	640	643
Total Return on CWIP	665	724	738	937	1,319	1,702	2,085	2,468	2,851	3,049	3,063	3,078
Boswell Ash Pond PH 2												
12/31/2020												
BOM	0	0	0	0	0	0	0	0	0	0	0	0
CapEx												
AFUDC												
EOM	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												
Sub-Total												
BOM	118,751,815	122,072,719	127,813,128	139,806,338	151,835,947	163,865,557	181,495,167	196,724,776	209,601,106	221,630,715	233,623,925	242,614,335
CapEx	3,320,903	5,740,410	11,993,210	12,029,610	12,029,610	17,629,610	15,229,610	12,876,330	12,029,610	11,993,210	8,990,410	8,873,210
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0
EOM	122,072,719	127,813,128	139,806,338	151,835,947	163,865,557	181,495,167	196,724,776	209,601,106	221,630,715	233,623,925	242,614,335	251,487,544
Return on CWIP												
After Tax Return on Equity	565,370	586,642	628,275	684,672	741,154	810,783	887,925	953,908	1,012,378	1,068,775	1,118,037	1,159,974
Income Tax Component	398,932	413,942	443,318	483,113	522,967	572,099	626,531	673,089	714,346	754,141	788,901	818,492
Interest Expense Component	254,873	264,463	283,231	308,655	334,117	365,507	400,283	430,028	456,387	481,811	504,019	522,924
Total Return on CWIP	1,219,174	1,265,047	1,354,824	1,476,439	1,598,239	1,748,389	1,914,738	2,057,025	2,183,111	2,304,727	2,410,956	2,501,391

Basin's Return on CWIP
BEC 4 Environmental
Boswell Ash Pond PH 1
Boswell Ash Pond PH 2

PUBLIC DOCUMENT
TRADE SECRET DATA
HAS BEEN EXCISED

Minnesota Power
BEC4 Project and Ash Pond Phases 1 and 2
Plant Additions, AFUDC and Return on CWIP

	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15
BEC 4 Environmental												In-Service
In Service 12/31/2015												12/31/2015
BOM	251,182,865	255,728,585	260,355,105	265,021,625	269,688,145	274,241,713	278,795,281	285,788,849	293,982,417	302,397,745	312,732,273	331,396,321
CapEx	4,545,720	4,626,520	4,666,520	4,666,520	4,553,568	4,553,568	6,993,568	8,193,568	8,415,328	10,334,528	18,664,048	5,024,208
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0
EOM	255,728,585	260,355,105	265,021,625	269,688,145	274,241,713	278,795,281	285,788,849	293,982,417	302,397,745	312,732,273	331,396,321	336,420,529
Return on CWIP												
After Tax Return on Equity	1,190,046	1,211,580	1,233,396	1,255,307	1,276,952	1,298,333	1,325,441	1,361,095	1,400,087	1,444,105	1,512,183	1,567,795
Income Tax Component	839,711	854,906	870,300	885,760	901,033	916,120	935,248	960,406	987,919	1,018,978	1,067,015	1,106,255
Interest Expense Component	536,481	546,189	556,024	565,901	575,659	585,297	597,518	613,591	631,169	651,013	681,703	706,773
Total Return on CWIP	2,566,239	2,612,674	2,659,720	2,706,968	2,753,645	2,799,750	2,858,207	2,935,092	3,019,175	3,114,096	3,260,901	3,380,823
Boswell Ash Pond PH 1												
12/31/2016												
BOM	304,679	437,288	569,898	702,508	835,117	967,727	1,100,336	1,232,946	1,601,556	1,734,165	1,866,775	1,999,384
CapEx	132,610	132,610	132,610	132,610	132,610	132,610	132,610	368,610	132,610	132,610	132,610	132,610
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0
EOM	437,288	569,898	702,508	835,117	967,727	1,100,336	1,232,946	1,601,556	1,734,165	1,866,775	1,999,384	2,131,994
Return on CWIP												
After Tax Return on Equity	1,742	2,365	2,987	3,610	4,232	4,855	5,478	6,654	7,831	8,454	9,076	9,699
Income Tax Component	1,229	1,668	2,108	2,547	2,986	3,426	3,865	4,695	5,526	5,965	6,404	6,844
Interest Expense Component	785	1,066	1,347	1,627	1,908	2,189	2,469	3,000	3,530	3,811	4,092	4,372
Total Return on CWIP	3,756	5,099	6,442	7,784	9,127	10,470	11,812	14,350	16,887	18,230	19,572	20,915
Boswell Ash Pond PH 2												
12/31/2020												
BOM	0	0	0	0	0	0	0	0	0	0	0	0
CapEx												
AFUDC												
EOM	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												
Sub-Total												
BOM	251,487,544	256,165,874	260,925,003	265,724,133	270,523,263	275,209,440	279,895,618	287,021,795	295,583,973	304,131,911	314,599,048	333,395,706
CapEx	4,678,330	4,759,130	4,799,130	4,799,130	4,686,178	4,686,178	7,126,178	8,562,178	8,547,938	10,467,138	18,796,658	5,156,818
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0
EOM	256,165,874	260,925,003	265,724,133	270,523,263	275,209,440	279,895,618	287,021,795	295,583,973	304,131,911	314,599,048	333,395,706	338,552,523
Return on CWIP												
After Tax Return on Equity	1,191,788	1,213,944	1,236,383	1,258,917	1,281,185	1,303,188	1,330,919	1,367,750	1,407,918	1,452,559	1,521,259	1,577,494
Income Tax Component	840,941	856,574	872,407	888,307	904,020	919,545	939,113	965,101	993,444	1,024,943	1,073,420	1,113,099
Interest Expense Component	537,267	547,255	557,370	567,528	577,567	587,486	599,988	616,591	634,699	654,824	685,794	711,145
Total Return on CWIP	2,569,995	2,617,773	2,666,161	2,714,752	2,762,772	2,810,219	2,870,019	2,949,442	3,036,062	3,132,325	3,280,473	3,401,738

Basin's Return on CWIP
BEC 4 Environmental
Boswell Ash Pond PH 1
Boswell Ash Pond PH 2

[redacted]

[TRADE SECRET DATA HAS BEEN EXCISED]

Minnesota Power
BEC4 Project and Ash Pond Phases 1 and 2
Plant Additions, AFUDC and Return on CWIP

PUBLIC DOCUMENT
TRADE SECRET DATA
HAS BEEN EXCISED

	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16
BEC 4 Environmental												
In Service 12/31/2015												
BOM												
CapEx												
AFUDC												
EOM												
Return on CWIP												
After Tax Return on Equity												
Income Tax Component												
Interest Expense Component												
Total Return on CWIP												
Boswell Ash Pond PH 1												In-Service
12/31/2016												12/31/2016
BOM	2,131,994	2,341,170	2,550,346	2,759,523	2,968,699	3,177,875	3,387,052	3,596,228	3,805,404	4,014,580	4,223,757	4,432,933
CapEx	209,176	209,176	209,176	209,176	209,176	209,176	209,176	209,176	209,176	209,176	209,176	209,176
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0
EOM	2,341,170	2,550,346	2,759,523	2,968,699	3,177,875	3,387,052	3,596,228	3,805,404	4,014,580	4,223,757	4,432,933	4,642,109
Return on CWIP												
After Tax Return on Equity	10,501	11,484	12,466	13,448	14,430	15,412	16,394	17,376	18,359	19,341	20,323	21,305
Income Tax Component	7,410	8,103	8,796	9,489	10,182	10,875	11,568	12,261	12,954	13,647	14,340	15,033
Interest Expense Component	4,734	5,177	5,620	6,062	6,505	6,948	7,391	7,833	8,276	8,719	9,162	9,604
Total Return on CWIP	22,645	24,763	26,881	28,999	31,117	33,235	35,353	37,471	39,589	41,707	43,824	45,942
Boswell Ash Pond PH 2												
12/31/2020												
BOM	0	0	0	0	0	0	0	0	0	0	0	0
CapEx												
AFUDC												
EOM	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												
Sub-Total												
BOM	338,552,523	338,761,700	338,970,876	339,180,052	339,389,228	339,598,405	339,807,581	340,016,757	340,225,934	340,435,110	340,644,286	340,853,462
CapEx	209,176	209,176	209,176	209,176	209,176	209,176	209,176	209,176	209,176	209,176	209,176	209,176
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0
EOM	338,761,700	338,970,876	339,180,052	339,389,228	339,598,405	339,807,581	340,016,757	340,225,934	340,435,110	340,644,286	340,853,462	341,062,639
Return on CWIP												
After Tax Return on Equity	10,501	11,484	12,466	13,448	14,430	15,412	16,394	17,376	18,359	19,341	20,323	21,305
Income Tax Component	7,410	8,103	8,796	9,489	10,182	10,875	11,568	12,261	12,954	13,647	14,340	15,033
Interest Expense Component	4,734	5,177	5,620	6,062	6,505	6,948	7,391	7,833	8,276	8,719	9,162	9,604
Total Return on CWIP	22,645	24,763	26,881	28,999	31,117	33,235	35,353	37,471	39,589	41,707	43,824	45,942

Basin's Return on CWIP	[redacted]
BEC 4 Environmental	
Boswell Ash Pond PH 1	
Boswell Ash Pond PH 2	

[TRADE SECRET DATA HAS BEEN EXCISED]

Minnesota Power
BEC4 Project and Ash Pond Phases 1 and 2
Plant Additions, AFUDC and Return on CWIP

PUBLIC DOCUMENT
TRADE SECRET DATA
HAS BEEN EXCISED

	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17
BEC 4 Environmental												
In Service 12/31/2015												
BOM												
CapEx												
AFUDC												
EOM												
Return on CWIP												
After Tax Return on Equity												
Income Tax Component												
Interest Expense Component												
Total Return on CWIP												
Boswell Ash Pond PH 1												
12/31/2016												
BOM												
CapEx												
AFUDC												
EOM												
Return on CWIP												
After Tax Return on Equity												
Income Tax Component												
Interest Expense Component												
Total Return on CWIP												
Boswell Ash Pond PH 2												
12/31/2020												
BOM	0	17,610	35,219	52,829	70,438	88,048	105,658	123,267	140,877	158,486	176,096	193,706
CapEx	17,610	17,610	17,610	17,610	17,610	17,610	17,610	17,610	17,610	17,610	17,610	17,610
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0
EOM	17,610	35,219	52,829	70,438	88,048	105,658	123,267	140,877	158,486	176,096	193,706	211,315
Return on CWIP												
After Tax Return on Equity	41	124	207	289	372	455	537	620	703	785	868	951
Income Tax Component	29	88	146	204	263	321	379	438	496	554	613	671
Interest Expense Component	19	56	93	130	168	205	242	280	317	354	391	429
Total Return on CWIP	89	267	446	624	802	981	1,159	1,337	1,516	1,694	1,872	2,050
Sub-Total												
BOM	341,062,639	341,080,248	341,097,858	341,115,467	341,133,077	341,150,687	341,168,296	341,185,906	341,203,515	341,221,125	341,238,735	341,256,344
CapEx	17,610	17,610	17,610	17,610	17,610	17,610	17,610	17,610	17,610	17,610	17,610	17,610
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0
EOM	341,080,248	341,097,858	341,115,467	341,133,077	341,150,687	341,168,296	341,185,906	341,203,515	341,221,125	341,238,735	341,256,344	341,273,954
Return on CWIP												
After Tax Return on Equity	41	124	207	289	372	455	537	620	703	785	868	951
Income Tax Component	29	88	146	204	263	321	379	438	496	554	613	671
Interest Expense Component	19	56	93	130	168	205	242	280	317	354	391	429
Total Return on CWIP	89	267	446	624	802	981	1,159	1,337	1,516	1,694	1,872	2,050

Basin's Return on CWIP	
BEC 4 Environmental	[redacted]
Boswell Ash Pond PH 1	
Boswell Ash Pond PH 2	

[TRADE SECRET DATA HAS BEEN EXCISED]

Minnesota Power
BEC4 Project and Ash Pond Phases 1 and 2
Plant Additions, AFUDC and Return on CWIP

PUBLIC DOCUMENT
TRADE SECRET DATA
HAS BEEN EXCISED

	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18
BEC 4 Environmental												
In Service 12/31/2015												
BOM												
CapEx												
AFUDC												
EOM												
Return on CWIP												
After Tax Return on Equity												
Income Tax Component												
Interest Expense Component												
Total Return on CWIP												
Boswell Ash Pond PH 1												
12/31/2016												
BOM												
CapEx												
AFUDC												
EOM												
Return on CWIP												
After Tax Return on Equity												
Income Tax Component												
Interest Expense Component												
Total Return on CWIP												
Boswell Ash Pond PH 2												
12/31/2020												
BOM	211,315	219,125	220,534	221,944	223,354	224,763	226,173	227,582	228,992	230,402	231,811	233,221
CapEx	7,810	1,410	1,410	1,410	1,410	1,410	1,410	1,410	1,410	1,410	1,410	1,410
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0
EOM	219,125	220,534	221,944	223,354	224,763	226,173	227,582	228,992	230,402	231,811	233,221	234,630
Return on CWIP												
After Tax Return on Equity	1,011	1,032	1,039	1,045	1,052	1,059	1,065	1,072	1,078	1,085	1,092	1,098
Income Tax Component	713	728	733	738	742	747	752	756	761	766	770	775
Interest Expense Component	456	465	468	471	474	477	480	483	486	489	492	495
Total Return on CWIP	2,179	2,226	2,240	2,254	2,269	2,283	2,297	2,311	2,326	2,340	2,354	2,368
Sub-Total												
BOM	341,273,954	341,281,763	341,283,173	341,284,583	341,285,992	341,287,402	341,288,811	341,290,221	341,291,631	341,293,040	341,294,450	341,295,859
CapEx	7,810	1,410	1,410	1,410	1,410	1,410	1,410	1,410	1,410	1,410	1,410	1,410
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0
EOM	341,281,763	341,283,173	341,284,583	341,285,992	341,287,402	341,288,811	341,290,221	341,291,631	341,293,040	341,294,450	341,295,859	341,297,269
Return on CWIP												
After Tax Return on Equity	1,011	1,032	1,039	1,045	1,052	1,059	1,065	1,072	1,078	1,085	1,092	1,098
Income Tax Component	713	728	733	738	742	747	752	756	761	766	770	775
Interest Expense Component	456	465	468	471	474	477	480	483	486	489	492	495
Total Return on CWIP	2,179	2,226	2,240	2,254	2,269	2,283	2,297	2,311	2,326	2,340	2,354	2,368

Basin's Return on CWIP
BEC 4 Environmental
Boswell Ash Pond PH 1
Boswell Ash Pond PH 2

[redacted]

[TRADE SECRET DATA HAS BEEN EXCISED]

Minnesota Power
BEC4 Project and Ash Pond Phases 1 and 2
Plant Additions, AFUDC and Return on CWIP

PUBLIC DOCUMENT
TRADE SECRET DATA
HAS BEEN EXCISED

	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												
In Service 12/31/2015												
BOM												
CapEx												
AFUDC												
EOM												
Return on CWIP												
After Tax Return on Equity												
Income Tax Component												
Interest Expense Component												
Total Return on CWIP												
Boswell Ash Pond PH 1												
12/31/2016												
BOM												
CapEx												
AFUDC												
EOM												
Return on CWIP												
After Tax Return on Equity												
Income Tax Component												
Interest Expense Component												
Total Return on CWIP												
Boswell Ash Pond PH 2												
12/31/2020												
BOM	234,630	268,373	302,116	335,859	369,602	403,345	437,088	470,831	504,574	538,317	572,060	605,803
CapEx	33,743	33,743	33,743	33,743	33,743	33,743	33,743	33,743	33,743	33,743	33,743	33,743
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0
EOM	268,373	302,116	335,859	369,602	403,345	437,088	470,831	504,574	538,317	572,060	605,803	639,546
Return on CWIP												
After Tax Return on Equity	1,181	1,339	1,498	1,656	1,815	1,973	2,131	2,290	2,448	2,607	2,765	2,924
Income Tax Component	833	945	1,057	1,169	1,280	1,392	1,504	1,616	1,728	1,839	1,951	2,063
Interest Expense Component	532	604	675	747	818	889	961	1,032	1,104	1,175	1,247	1,318
Total Return on CWIP	2,546	2,888	3,230	3,571	3,913	4,255	4,596	4,938	5,280	5,621	5,963	6,305
Sub-Total												
BOM	341,297,269	341,331,012	341,364,755	341,398,498	341,432,241	341,465,984	341,499,727	341,533,469	341,567,212	341,600,955	341,634,698	341,668,441
CapEx	33,743	33,743	33,743	33,743	33,743	33,743	33,743	33,743	33,743	33,743	33,743	33,743
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0
EOM	341,331,012	341,364,755	341,398,498	341,432,241	341,465,984	341,499,727	341,533,469	341,567,212	341,600,955	341,634,698	341,668,441	341,702,184
Return on CWIP												
After Tax Return on Equity	1,181	1,339	1,498	1,656	1,815	1,973	2,131	2,290	2,448	2,607	2,765	2,924
Income Tax Component	833	945	1,057	1,169	1,280	1,392	1,504	1,616	1,728	1,839	1,951	2,063
Interest Expense Component	532	604	675	747	818	889	961	1,032	1,104	1,175	1,247	1,318
Total Return on CWIP	2,546	2,888	3,230	3,571	3,913	4,255	4,596	4,938	5,280	5,621	5,963	6,305
Basin's Return on CWIP	[redacted]											
BEC 4 Environmental												
Boswell Ash Pond PH 1												
Boswell Ash Pond PH 2												

[TRADE SECRET DATA HAS BEEN EXCISED]

Minnesota Power
BEC4 Project and Ash Pond Phases 1 and 2
Plant Additions, AFUDC and Return on CWIP

PUBLIC DOCUMENT
TRADE SECRET DATA
HAS BEEN EXCISED

	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20
BEC 4 Environmental												
In Service 12/31/2015												
BOM												
CapEx												
AFUDC												
EOM												
Return on CWIP												
After Tax Return on Equity												
Income Tax Component												
Interest Expense Component												
Total Return on CWIP												
Boswell Ash Pond PH 1												
12/31/2016												
BOM												
CapEx												
AFUDC												
EOM												
Return on CWIP												
After Tax Return on Equity												
Income Tax Component												
Interest Expense Component												
Total Return on CWIP												
Boswell Ash Pond PH 2												In-Service
12/31/2020												12/31/2016
BOM	639,546	753,482	867,418	981,354	1,095,291	1,209,227	1,323,163	1,437,100	1,551,036	1,664,972	1,778,908	1,892,845
CapEx	113,936	113,936	113,936	113,936	113,936	113,936	113,936	113,936	113,936	113,936	113,936	113,936
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0
EOM	753,482	867,418	981,354	1,095,291	1,209,227	1,323,163	1,437,100	1,551,036	1,664,972	1,778,908	1,892,845	2,006,781
Return on CWIP												
After Tax Return on Equity	3,270	3,805	4,340	4,875	5,410	5,945	6,480	7,015	7,550	8,085	8,620	9,155
Income Tax Component	2,308	2,685	3,063	3,440	3,817	4,195	4,572	4,950	5,327	5,705	6,082	6,460
Interest Expense Component	1,474	1,715	1,957	2,198	2,439	2,680	2,921	3,162	3,404	3,645	3,886	4,127
Total Return on CWIP	7,052	8,206	9,359	10,513	11,667	12,820	13,974	15,127	16,281	17,435	18,588	19,742
Sub-Total												
BOM	341,702,184	341,816,120	341,930,057	342,043,993	342,157,929	342,271,866	342,385,802	342,499,738	342,613,674	342,727,611	342,841,547	342,955,483
CapEx	113,936	113,936	113,936	113,936	113,936	113,936	113,936	113,936	113,936	113,936	113,936	113,936
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0
EOM	341,816,120	341,930,057	342,043,993	342,157,929	342,271,866	342,385,802	342,499,738	342,613,674	342,727,611	342,841,547	342,955,483	343,069,419
Return on CWIP												
After Tax Return on Equity	3,270	3,805	4,340	4,875	5,410	5,945	6,480	7,015	7,550	8,085	8,620	9,155
Income Tax Component	2,308	2,685	3,063	3,440	3,817	4,195	4,572	4,950	5,327	5,705	6,082	6,460
Interest Expense Component	1,474	1,715	1,957	2,198	2,439	2,680	2,921	3,162	3,404	3,645	3,886	4,127
Total Return on CWIP	7,052	8,206	9,359	10,513	11,667	12,820	13,974	15,127	16,281	17,435	18,588	19,742

Basin's Return on CWIP	End Basin Contract
BEC 4 Environmental	[redacted]
Boswell Ash Pond PH 1	
Boswell Ash Pond PH 2	

[TRADE SECRET DATA HAS BEEN EXCISED]

Minnesota Power
Ash Project Phases 3 to 5
Plant Additions, AFUDC and Return on CWIP

	Total	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22
Boswell Ash Pond PH 3	1,902,400												
In Service 12/31/2024													
BOM		0	1,333	2,667	4,000	5,333	6,667	8,000	9,333	10,667	12,000	13,333	14,667
CapEx	1,902,400	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333
AFUDC	0												
EOM		1,333	2,667	4,000	5,333	6,667	8,000	9,333	10,667	12,000	13,333	14,667	16,000
Return on CWIP													
After Tax Return on Equity		3	9	16	22	28	34	41	47	53	59	66	72
Income Tax Component		2	7	11	15	20	24	29	33	38	42	46	51
Interest Expense Component		1	4	7	10	13	16	18	21	24	27	30	32
Total Return on CWIP		7	20	34	47	61	74	88	101	115	128	142	155
Boswell Ash Pond PH 4	2,220,800												
12/31/2028													
BOM		0	0	0	0	0	0	0	0	0	0	0	0
CapEx	2,220,800												
AFUDC	0												
EOM		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													
Boswell Ash Pond PH 5	2,599,200												
12/31/2032													
BOM		0	0	0	0	0	0	0	0	0	0	0	0
CapEx	2,599,200												
AFUDC	0												
EOM		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													
Sub-Total	6,722,400												
BOM		0	1,333	2,667	4,000	5,333	6,667	8,000	9,333	10,667	12,000	13,333	14,667
CapEx	6,722,400	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0	0
EOM		1,333	2,667	4,000	5,333	6,667	8,000	9,333	10,667	12,000	13,333	14,667	16,000
Return on CWIP													
After Tax Return on Equity		3	9	16	22	28	34	41	47	53	59	66	72
Income Tax Component		2	7	11	15	20	24	29	33	38	42	46	51
Interest Expense Component		1	4	7	10	13	16	18	21	24	27	30	32
Total Return on CWIP		7	20	34	47	61	74	88	101	115	128	142	155

1/ Capital estimates prepared by Barr Engineering and provided by Environmental & Fuels Depts.
2/ Assumes return on CWIP starts 7/1/2013 after expected MPUC approval in June 2013.
3/ Pre-tax ROR of 12.15% per last rate case E-015/GR-09-1151. Refer to Exhibit B-4.
4/ Annual cash flows for Phase 3 to 5 spread evenly by month.

Minnesota Power
Ash Project Phases 3 to 5
Plant Additions, AFUDC and Return on CWIP

	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23
Boswell Ash Pond PH 3												
In Service 12/31/2024												
BOM	16,000	54,067	92,133	130,200	168,267	206,333	244,400	282,467	320,533	358,600	396,667	434,733
CapEx	38,067	38,067	38,067	38,067	38,067	38,067	38,067	38,067	38,067	38,067	38,067	38,067
AFUDC												
EOM	54,067	92,133	130,200	168,267	206,333	244,400	282,467	320,533	358,600	396,667	434,733	472,800
Return on CWIP												
After Tax Return on Equity	164	343	522	701	879	1,058	1,237	1,416	1,594	1,773	1,952	2,131
Income Tax Component	116	242	368	494	621	747	873	999	1,125	1,251	1,377	1,503
Interest Expense Component	74	155	235	316	396	477	558	638	719	799	880	960
Total Return on CWIP	355	740	1,126	1,511	1,896	2,282	2,667	3,053	3,438	3,824	4,209	4,594
Boswell Ash Pond PH 4												
12/31/2028												
BOM	0	0	0	0	0	0	0	0	0	0	0	0
CapEx												
AFUDC												
EOM	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												
Boswell Ash Pond PH 5												
12/31/2032												
BOM	0	0	0	0	0	0	0	0	0	0	0	0
CapEx												
AFUDC												
EOM	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												
Sub-Total												
BOM	16,000	54,067	92,133	130,200	168,267	206,333	244,400	282,467	320,533	358,600	396,667	434,733
CapEx	38,067	38,067	38,067	38,067	38,067	38,067	38,067	38,067	38,067	38,067	38,067	38,067
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0
EOM	54,067	92,133	130,200	168,267	206,333	244,400	282,467	320,533	358,600	396,667	434,733	472,800
Return on CWIP												
After Tax Return on Equity	164	343	522	701	879	1,058	1,237	1,416	1,594	1,773	1,952	2,131
Income Tax Component	116	242	368	494	621	747	873	999	1,125	1,251	1,377	1,503
Interest Expense Component	74	155	235	316	396	477	558	638	719	799	880	960
Total Return on CWIP	355	740	1,126	1,511	1,896	2,282	2,667	3,053	3,438	3,824	4,209	4,594

Minnesota Power
Ash Project Phases 3 to 5
Plant Additions, AFUDC and Return on CWIP

	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24
Boswell Ash Pond PH 3												In-Service
In Service 12/31/2024												12/31/2024
BOM	472,800	591,933	711,067	830,200	949,333	1,068,467	1,187,600	1,306,733	1,425,867	1,545,000	1,664,133	1,783,267
CapEx	119,133	119,133	119,133	119,133	119,133	119,133	119,133	119,133	119,133	119,133	119,133	119,133
AFUDC												
EOM	591,933	711,067	830,200	949,333	1,068,467	1,187,600	1,306,733	1,425,867	1,545,000	1,664,133	1,783,267	1,902,400
Return on CWIP												
After Tax Return on Equity	2,500	3,059	3,618	4,178	4,737	5,296	5,856	6,415	6,975	7,534	8,093	8,653
Income Tax Component	1,764	2,158	2,553	2,948	3,343	3,737	4,132	4,527	4,921	5,316	5,711	6,105
Interest Expense Component	1,127	1,379	1,631	1,883	2,136	2,388	2,640	2,892	3,144	3,396	3,648	3,901
Total Return on CWIP	5,390	6,596	7,803	9,009	10,215	11,421	12,628	13,834	15,040	16,246	17,452	18,659
Boswell Ash Pond PH 4												
12/31/2028												
BOM	0	0	0	0	0	0	0	0	0	0	0	0
CapEx												
AFUDC												
EOM	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												
Boswell Ash Pond PH 5												
12/31/2032												
BOM	0	0	0	0	0	0	0	0	0	0	0	0
CapEx												
AFUDC												
EOM	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												
Sub-Total												
BOM	472,800	591,933	711,067	830,200	949,333	1,068,467	1,187,600	1,306,733	1,425,867	1,545,000	1,664,133	1,783,267
CapEx	119,133	119,133	119,133	119,133	119,133	119,133	119,133	119,133	119,133	119,133	119,133	119,133
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0
EOM	591,933	711,067	830,200	949,333	1,068,467	1,187,600	1,306,733	1,425,867	1,545,000	1,664,133	1,783,267	1,902,400
Return on CWIP												
After Tax Return on Equity	2,500	3,059	3,618	4,178	4,737	5,296	5,856	6,415	6,975	7,534	8,093	8,653
Income Tax Component	1,764	2,158	2,553	2,948	3,343	3,737	4,132	4,527	4,921	5,316	5,711	6,105
Interest Expense Component	1,127	1,379	1,631	1,883	2,136	2,388	2,640	2,892	3,144	3,396	3,648	3,901
Total Return on CWIP	5,390	6,596	7,803	9,009	10,215	11,421	12,628	13,834	15,040	16,246	17,452	18,659

Minnesota Power
Ash Project Phases 3 to 5
Plant Additions, AFUDC and Return on CWIP

	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25
Boswell Ash Pond PH 3												
In Service 12/31/2024												
BOM												
CapEx												
AFUDC												
EOM												
Return on CWIP												
After Tax Return on Equity												
Income Tax Component												
Interest Expense Component												
Total Return on CWIP												
Boswell Ash Pond PH 4												
12/31/2028												
BOM	0	0	0	0	0	0	0	0	0	0	0	0
CapEx												
AFUDC												
EOM	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												
Boswell Ash Pond PH 5												
12/31/2032												
BOM	0	0	0	0	0	0	0	0	0	0	0	0
CapEx												
AFUDC												
EOM	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												
Sub-Total												
BOM	1,902,400	1,902,400	1,902,400	1,902,400	1,902,400	1,902,400	1,902,400	1,902,400	1,902,400	1,902,400	1,902,400	1,902,400
CapEx	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
EOM	1,902,400	1,902,400	1,902,400	1,902,400	1,902,400	1,902,400	1,902,400	1,902,400	1,902,400	1,902,400	1,902,400	1,902,400
Return on CWIP												
After Tax Return on Equity	0	0	0	0	0	0	0	0	0	0	0	0
Income Tax Component	0	0	0	0	0	0	0	0	0	0	0	0
Interest Expense Component	0	0	0	0	0	0	0	0	0	0	0	0
Total Return on CWIP	0	0	0	0	0	0	0	0	0	0	0	0

Minnesota Power
Ash Project Phases 3 to 5
Plant Additions, AFUDC and Return on CWIP

	Jan-26	Feb-26	Mar-26	Apr-26	May-26	Jun-26	Jul-26	Aug-26	Sep-26	Oct-26	Nov-26	Dec-26
Boswell Ash Pond PH 3												
In Service 12/31/2024												
BOM												
CapEx												
AFUDC												
EOM												
Return on CWIP												
After Tax Return on Equity												
Income Tax Component												
Interest Expense Component												
Total Return on CWIP												
Boswell Ash Pond PH 4												
12/31/2028												
BOM	0	1,333	2,667	4,000	5,333	6,667	8,000	9,333	10,667	12,000	13,333	14,667
CapEx	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333
AFUDC												
EOM	1,333	2,667	4,000	5,333	6,667	8,000	9,333	10,667	12,000	13,333	14,667	16,000
Return on CWIP												
After Tax Return on Equity	3	9	16	22	28	34	41	47	53	59	66	72
Income Tax Component	2	7	11	15	20	24	29	33	38	42	46	51
Interest Expense Component	1	4	7	10	13	16	18	21	24	27	30	32
Total Return on CWIP	7	20	34	47	61	74	88	101	115	128	142	155
Boswell Ash Pond PH 5												
12/31/2032												
BOM	0	0	0	0	0	0	0	0	0	0	0	0
CapEx												
AFUDC												
EOM	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												
Sub-Total												
BOM	1,902,400	1,903,733	1,905,067	1,906,400	1,907,733	1,909,067	1,910,400	1,911,733	1,913,067	1,914,400	1,915,733	1,917,067
CapEx	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0
EOM	1,903,733	1,905,067	1,906,400	1,907,733	1,909,067	1,910,400	1,911,733	1,913,067	1,914,400	1,915,733	1,917,067	1,918,400
Return on CWIP												
After Tax Return on Equity	3	9	16	22	28	34	41	47	53	59	66	72
Income Tax Component	2	7	11	15	20	24	29	33	38	42	46	51
Interest Expense Component	1	4	7	10	13	16	18	21	24	27	30	32
Total Return on CWIP	7	20	34	47	61	74	88	101	115	128	142	155

Minnesota Power
Ash Project Phases 3 to 5
Plant Additions, AFUDC and Return on CWIP

	Jan-27	Feb-27	Mar-27	Apr-27	May-27	Jun-27	Jul-27	Aug-27	Sep-27	Oct-27	Nov-27	Dec-27
Boswell Ash Pond PH 3												
In Service 12/31/2024												
BOM												
CapEx												
AFUDC												
EOM												
Return on CWIP												
After Tax Return on Equity												
Income Tax Component												
Interest Expense Component												
Total Return on CWIP												
Boswell Ash Pond PH 4												
12/31/2028												
BOM	16,000	60,800	105,600	150,400	195,200	240,000	284,800	329,600	374,400	419,200	464,000	508,800
CapEx	44,800	44,800	44,800	44,800	44,800	44,800	44,800	44,800	44,800	44,800	44,800	44,800
AFUDC												
EOM	60,800	105,600	150,400	195,200	240,000	284,800	329,600	374,400	419,200	464,000	508,800	553,600
Return on CWIP												
After Tax Return on Equity	180	391	601	811	1,022	1,232	1,442	1,653	1,863	2,073	2,284	2,494
Income Tax Component	127	276	424	572	721	869	1,018	1,166	1,315	1,463	1,611	1,760
Interest Expense Component	81	176	271	366	461	555	650	745	840	935	1,030	1,124
Total Return on CWIP	389	842	1,296	1,750	2,203	2,657	3,110	3,564	4,018	4,471	4,925	5,378
Boswell Ash Pond PH 5												
12/31/2032												
BOM	0	0	0	0	0	0	0	0	0	0	0	0
CapEx												
AFUDC												
EOM	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												
Sub-Total												
BOM	1,918,400	1,963,200	2,008,000	2,052,800	2,097,600	2,142,400	2,187,200	2,232,000	2,276,800	2,321,600	2,366,400	2,411,200
CapEx	44,800	44,800	44,800	44,800	44,800	44,800	44,800	44,800	44,800	44,800	44,800	44,800
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0
EOM	1,963,200	2,008,000	2,052,800	2,097,600	2,142,400	2,187,200	2,232,000	2,276,800	2,321,600	2,366,400	2,411,200	2,456,000
Return on CWIP												
After Tax Return on Equity	180	391	601	811	1,022	1,232	1,442	1,653	1,863	2,073	2,284	2,494
Income Tax Component	127	276	424	572	721	869	1,018	1,166	1,315	1,463	1,611	1,760
Interest Expense Component	81	176	271	366	461	555	650	745	840	935	1,030	1,124
Total Return on CWIP	389	842	1,296	1,750	2,203	2,657	3,110	3,564	4,018	4,471	4,925	5,378

Minnesota Power
Ash Project Phases 3 to 5
Plant Additions, AFUDC and Return on CWIP

	Jan-28	Feb-28	Mar-28	Apr-28	May-28	Jun-28	Jul-28	Aug-28	Sep-28	Oct-28	Nov-28	Dec-28
Boswell Ash Pond PH 3												
In Service 12/31/2024												
BOM												
CapEx												
AFUDC												
EOM												
Return on CWIP												
After Tax Return on Equity												
Income Tax Component												
Interest Expense Component												
Total Return on CWIP												
Boswell Ash Pond PH 4												In-Service
12/31/2028												12/31/2028
BOM	553,600	692,533	831,467	970,400	1,109,333	1,248,267	1,387,200	1,526,133	1,665,067	1,804,000	1,942,933	2,081,867
CapEx	138,933	138,933	138,933	138,933	138,933	138,933	138,933	138,933	138,933	138,933	138,933	138,933
AFUDC												
EOM	692,533	831,467	970,400	1,109,333	1,248,267	1,387,200	1,526,133	1,665,067	1,804,000	1,942,933	2,081,867	2,220,800
Return on CWIP												
After Tax Return on Equity	2,925	3,578	4,230	4,882	5,535	6,187	6,839	7,492	8,144	8,796	9,449	10,101
Income Tax Component	2,064	2,525	2,985	3,445	3,905	4,366	4,826	5,286	5,747	6,207	6,667	7,127
Interest Expense Component	1,319	1,613	1,907	2,201	2,495	2,789	3,083	3,377	3,671	3,966	4,260	4,554
Total Return on CWIP	6,309	7,715	9,122	10,529	11,935	13,342	14,749	16,155	17,562	18,969	20,376	21,782
Boswell Ash Pond PH 5												
12/31/2032												
BOM	0	0	0	0	0	0	0	0	0	0	0	0
CapEx												
AFUDC												
EOM	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												
Sub-Total												
BOM	2,456,000	2,594,933	2,733,867	2,872,800	3,011,733	3,150,667	3,289,600	3,428,533	3,567,467	3,706,400	3,845,333	3,984,267
CapEx	138,933	138,933	138,933	138,933	138,933	138,933	138,933	138,933	138,933	138,933	138,933	138,933
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0
EOM	2,594,933	2,733,867	2,872,800	3,011,733	3,150,667	3,289,600	3,428,533	3,567,467	3,706,400	3,845,333	3,984,267	4,123,200
Return on CWIP												
After Tax Return on Equity	2,925	3,578	4,230	4,882	5,535	6,187	6,839	7,492	8,144	8,796	9,449	10,101
Income Tax Component	2,064	2,525	2,985	3,445	3,905	4,366	4,826	5,286	5,747	6,207	6,667	7,127
Interest Expense Component	1,319	1,613	1,907	2,201	2,495	2,789	3,083	3,377	3,671	3,966	4,260	4,554
Total Return on CWIP	6,309	7,715	9,122	10,529	11,935	13,342	14,749	16,155	17,562	18,969	20,376	21,782

Minnesota Power
Ash Project Phases 3 to 5
Plant Additions, AFUDC and Return on CWIP

	Jan-29	Feb-29	Mar-29	Apr-29	May-29	Jun-29	Jul-29	Aug-29	Sep-29	Oct-29	Nov-29	Dec-29
Boswell Ash Pond PH 3												
In Service 12/31/2024												
BOM												
CapEx												
AFUDC												
EOM												
Return on CWIP												
After Tax Return on Equity												
Income Tax Component												
Interest Expense Component												
Total Return on CWIP												
Boswell Ash Pond PH 4												
12/31/2028												
BOM												
CapEx												
AFUDC												
EOM												
Return on CWIP												
After Tax Return on Equity												
Income Tax Component												
Interest Expense Component												
Total Return on CWIP												
Boswell Ash Pond PH 5												
12/31/2032												
BOM	0	0	0	0	0	0	0	0	0	0	0	0
CapEx												
AFUDC												
EOM	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												
Sub-Total												
BOM	4,123,200	4,123,200	4,123,200	4,123,200	4,123,200	4,123,200	4,123,200	4,123,200	4,123,200	4,123,200	4,123,200	4,123,200
CapEx	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
EOM	4,123,200	4,123,200	4,123,200	4,123,200	4,123,200	4,123,200	4,123,200	4,123,200	4,123,200	4,123,200	4,123,200	4,123,200
Return on CWIP												
After Tax Return on Equity	0	0	0	0	0	0	0	0	0	0	0	0
Income Tax Component	0	0	0	0	0	0	0	0	0	0	0	0
Interest Expense Component	0	0	0	0	0	0	0	0	0	0	0	0
Total Return on CWIP	0	0	0	0	0	0	0	0	0	0	0	0

Minnesota Power
Ash Project Phases 3 to 5
Plant Additions, AFUDC and Return on CWIP

	Jan-30	Feb-30	Mar-30	Apr-30	May-30	Jun-30	Jul-30	Aug-30	Sep-30	Oct-30	Nov-30	Dec-30
Boswell Ash Pond PH 3												
In Service 12/31/2024												
BOM												
CapEx												
AFUDC												
EOM												
Return on CWIP												
After Tax Return on Equity												
Income Tax Component												
Interest Expense Component												
Total Return on CWIP												
Boswell Ash Pond PH 4												
12/31/2028												
BOM												
CapEx												
AFUDC												
EOM												
Return on CWIP												
After Tax Return on Equity												
Income Tax Component												
Interest Expense Component												
Total Return on CWIP												
Boswell Ash Pond PH 5												
12/31/2032												
BOM	0	2,000	4,000	6,000	8,000	10,000	12,000	14,000	16,000	18,000	20,000	22,000
CapEx	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
AFUDC												
EOM	2,000	4,000	6,000	8,000	10,000	12,000	14,000	16,000	18,000	20,000	22,000	24,000
Return on CWIP												
After Tax Return on Equity	5	14	23	33	42	52	61	70	80	89	99	108
Income Tax Component	3	10	17	23	30	36	43	50	56	63	70	76
Interest Expense Component	2	6	11	15	19	23	28	32	36	40	44	49
Total Return on CWIP	10	30	51	71	91	111	132	152	172	192	213	233
Sub-Total												
BOM	4,123,200	4,125,200	4,127,200	4,129,200	4,131,200	4,133,200	4,135,200	4,137,200	4,139,200	4,141,200	4,143,200	4,145,200
CapEx	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0
EOM	4,125,200	4,127,200	4,129,200	4,131,200	4,133,200	4,135,200	4,137,200	4,139,200	4,141,200	4,143,200	4,145,200	4,147,200
Return on CWIP												
After Tax Return on Equity	5	14	23	33	42	52	61	70	80	89	99	108
Income Tax Component	3	10	17	23	30	36	43	50	56	63	70	76
Interest Expense Component	2	6	11	15	19	23	28	32	36	40	44	49
Total Return on CWIP	10	30	51	71	91	111	132	152	172	192	213	233

Minnesota Power
Ash Project Phases 3 to 5
Plant Additions, AFUDC and Return on CWIP

	Jan-31	Feb-31	Mar-31	Apr-31	May-31	Jun-31	Jul-31	Aug-31	Sep-31	Oct-31	Nov-31	Dec-31
Boswell Ash Pond PH 3												
In Service 12/31/2024												
BOM												
CapEx												
AFUDC												
EOM												
Return on CWIP												
After Tax Return on Equity												
Income Tax Component												
Interest Expense Component												
Total Return on CWIP												
Boswell Ash Pond PH 4												
12/31/2028												
BOM												
CapEx												
AFUDC												
EOM												
Return on CWIP												
After Tax Return on Equity												
Income Tax Component												
Interest Expense Component												
Total Return on CWIP												
Boswell Ash Pond PH 5												
12/31/2032												
BOM	24,000	75,800	127,600	179,400	231,200	283,000	334,800	386,600	438,400	490,200	542,000	593,800
CapEx	51,800	51,800	51,800	51,800	51,800	51,800	51,800	51,800	51,800	51,800	51,800	51,800
AFUDC												
EOM	75,800	127,600	179,400	231,200	283,000	334,800	386,600	438,400	490,200	542,000	593,800	645,600
Return on CWIP												
After Tax Return on Equity	234	478	721	964	1,207	1,450	1,694	1,937	2,180	2,423	2,666	2,910
Income Tax Component	165	337	509	680	852	1,023	1,195	1,367	1,538	1,710	1,881	2,053
Interest Expense Component	106	215	325	435	544	654	763	873	983	1,092	1,202	1,312
Total Return on CWIP	505	1,030	1,554	2,079	2,603	3,128	3,652	4,177	4,701	5,226	5,750	6,274
Sub-Total												
BOM	4,147,200	4,199,000	4,250,800	4,302,600	4,354,400	4,406,200	4,458,000	4,509,800	4,561,600	4,613,400	4,665,200	4,717,000
CapEx	51,800	51,800	51,800	51,800	51,800	51,800	51,800	51,800	51,800	51,800	51,800	51,800
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0
EOM	4,199,000	4,250,800	4,302,600	4,354,400	4,406,200	4,458,000	4,509,800	4,561,600	4,613,400	4,665,200	4,717,000	4,768,800
Return on CWIP												
After Tax Return on Equity	234	478	721	964	1,207	1,450	1,694	1,937	2,180	2,423	2,666	2,910
Income Tax Component	165	337	509	680	852	1,023	1,195	1,367	1,538	1,710	1,881	2,053
Interest Expense Component	106	215	325	435	544	654	763	873	983	1,092	1,202	1,312
Total Return on CWIP	505	1,030	1,554	2,079	2,603	3,128	3,652	4,177	4,701	5,226	5,750	6,274

Minnesota Power
Ash Project Phases 3 to 5
Plant Additions, AFUDC and Return on CWIP

	Jan-32	Feb-32	Mar-32	Apr-32	May-32	Jun-32	Jul-32	Aug-32	Sep-32	Oct-32	Nov-32	Dec-32
Boswell Ash Pond PH 3												
In Service 12/31/2024												
BOM												
CapEx												
AFUDC												
EOM												
Return on CWIP												
After Tax Return on Equity												
Income Tax Component												
Interest Expense Component												
Total Return on CWIP												
Boswell Ash Pond PH 4												
12/31/2028												
BOM												
CapEx												
AFUDC												
EOM												
Return on CWIP												
After Tax Return on Equity												
Income Tax Component												
Interest Expense Component												
Total Return on CWIP												
Boswell Ash Pond PH 5												In-Service
12/31/2032												12/31/2028
BOM	645,600	808,400	971,200	1,134,000	1,296,800	1,459,600	1,622,400	1,785,200	1,948,000	2,110,800	2,273,600	2,436,400
CapEx	162,800	162,800	162,800	162,800	162,800	162,800	162,800	162,800	162,800	162,800	162,800	162,800
AFUDC												
EOM	808,400	971,200	1,134,000	1,296,800	1,459,600	1,622,400	1,785,200	1,948,000	2,110,800	2,273,600	2,436,400	2,599,200
Return on CWIP												
After Tax Return on Equity	3,413	4,178	4,942	5,707	6,471	7,235	8,000	8,764	9,529	10,293	11,057	11,822
Income Tax Component	2,409	2,948	3,487	4,027	4,566	5,105	5,645	6,184	6,724	7,263	7,802	8,342
Interest Expense Component	1,539	1,883	2,228	2,573	2,917	3,262	3,606	3,951	4,296	4,640	4,985	5,329
Total Return on CWIP	7,361	9,009	10,658	12,306	13,954	15,603	17,251	18,899	20,548	22,196	23,844	25,493
Sub-Total												
BOM	4,768,800	4,931,600	5,094,400	5,257,200	5,420,000	5,582,800	5,745,600	5,908,400	6,071,200	6,234,000	6,396,800	6,559,600
CapEx	162,800	162,800	162,800	162,800	162,800	162,800	162,800	162,800	162,800	162,800	162,800	162,800
AFUDC	0	0	0	0	0	0	0	0	0	0	0	0
EOM	4,931,600	5,094,400	5,257,200	5,420,000	5,582,800	5,745,600	5,908,400	6,071,200	6,234,000	6,396,800	6,559,600	6,722,400
Return on CWIP												
After Tax Return on Equity	3,413	4,178	4,942	5,707	6,471	7,235	8,000	8,764	9,529	10,293	11,057	11,822
Income Tax Component	2,409	2,948	3,487	4,027	4,566	5,105	5,645	6,184	6,724	7,263	7,802	8,342
Interest Expense Component	1,539	1,883	2,228	2,573	2,917	3,262	3,606	3,951	4,296	4,640	4,985	5,329
Total Return on CWIP	7,361	9,009	10,658	12,306	13,954	15,603	17,251	18,899	20,548	22,196	23,844	25,493

Minnesota Power
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%
	$ 1,524,211	100.00%		8.180%	12.150%	7.130%

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	12.1500%	

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.

Allete, Inc., d/b/a Minnesota Power
Docket No. E-015/GR-09-1151
E8760 Allocation Factor for 2010 Rebuttal Customer Budget
Revised from original work paper AF-3, page 20.

Retail Class	Retail 2010 MWh		2010 Components				E8760 Adjusted for Jurisdictional Split of 83.872%		
	MWh	MWh %	2010 MWh w / losses	Avg 2008 LMP $/MW	MWH %	E8760	2010 MWh w / losses	MWH %	E8760
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Residential	1,097,645	12.62%	1,164,063	50.58	13.14%	14.07%	976,323	11.02%	11.801%
General Service	609,626	7.01%	645,945	50.59	7.29%	7.81%	541,767	6.12%	6.550%
Large Light & Power	1,238,995	14.24%	1,288,704	47.44	14.55%	14.61%	1,080,862	12.21%	12.254%
Large Power	5,672,493	65.21%	5,672,798	46.19	64.06%	62.63%	4,757,889	53.73%	52.529%
Municipal Pumping	58,626	0.67%	61,255	46.35	0.69%	0.68%	51,376	0.58%	0.570%
Lighting	21,579	0.25%	22,885	34.97	0.26%	0.20%	19,194	0.22%	0.168%
Total	8,698,964	100.00%	8,855,650	47.24	100.00%	100.00%	7,427,411	83.872%	83.872%

Note: Jursidictional split based on 2010 E-01 Energy allocator.

Source: MP Exhibit___(SJS), Rebuttal Schedule 3, Page 15 of 15, Docket No. E-015/GR-09-1151.

Minnesota Power
Docket No. E-015/GR-09-1151
Demand Responsibility of Power Supply Cost Based on Peak & Average Methodology: D-01 & D-02
Test Year 2010 Rebuttal Customer Budget
Revised from original work paper AF-3, page 14.

		Total Retail	Residential	General Service	Large Light & Power	Large Power	Municipal Pumping	Lighting
1	Annual Energy (E-01 with losses)	8,973,590	1,164,063	645,945	1,311,171	5,768,410	61,116	22,885
2	Average Demand	1,024,382	132,884	73,738	149,677	658,494	6,977	2,612
3	Percent	100.000	12.972	7.198	14.611	64.282	0.681	0.255
4	Annual CP Demand (loss adjusted)	1,267,035	214,342	116,138	224,399	697,256	9,334	5,567
5	Percent	100.000	16.917	9.166	17.711	55.031	0.737	0.439
6	Annual Load Factor (Line 2 / Line 4)	0.80849						
7	1.0 - Load Factor	0.19151						
8	Average Factor (Line 3 x Line 6 total)	80.849	10.488	5.820	11.813	51.971	0.551	0.206
9	Peak Factor (Line 5 x Line 7 total)	19.151	3.240	1.755	3.392	10.539	0.141	0.084
10	Composite Factor - D-01 (Line 8 + Line 9)	100.000	13.728	7.575	15.205	62.510	0.692	0.290
11	Power Supply Production - D-01 Adjusted for Jurisditional Split (Line 10 x .82017)	82.017	11.259	6.213	12.471	51.269	0.568	0.237
12	Power Supply Transmission - D-02 Adjusted for Jurisditional Split (Line 10 x .77570)	77.570	10.649	5.876	11.795	48.489	0.537	0.224
13	Power Supply Production - CP Peak (Line 5 x .82017)	82.017	13.875	7.518	14.526	45.134	0.604	0.360

Notes:
Residential, General Service, Large Light and Power and Municipal Pumping CP demands per customer from load research multiplied by budgeted number of customers and adjusted for losses. Large Power CP demand based on 2008 CP adjusted for losses and ratio of 2008 to Test Year average demand. Large Light and Power and Large Power loads normalized to reflect three cusomters that moved from Large Power to Large Light and Power. Lighting CP is average load based on Test Year budgeted total energy and 4,200 burning hours and adjusted for losses.
Line 13 added for Boswell 4 Environmental Rider Petition
Source: MP Exhibit___(SJS), Rebuttal Schedule 3, Page 9 of 15, Docket No. E-015/GR-09-1151.

Minnesota Power
Rider for BEC4 Emission Reduction
Tax Depreciation Table

	40% Weighting 1/	60% Weighting 2/	Weighted Average
Year 1	3.750%	7.160%	5.796%
Year 2	7.219%	14.280%	11.456%
Year 3	6.677%	14.280%	11.239%
Year 4	6.177%	14.280%	11.039%
Year 5	5.713%	14.280%	10.853%
Year 6	5.285%	14.280%	10.682%
Year 7	4.888%	14.280%	10.523%
Year 8	4.522%	7.160%	6.105%
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%
	100.000%	100.000%	100.000%

Weighting allocation per tax department.
1/ 40% weighting is 20 year tax table, half-year
2/ 60% weighting is 84 month straight line

Name: JOHN DOE
Account: 1234

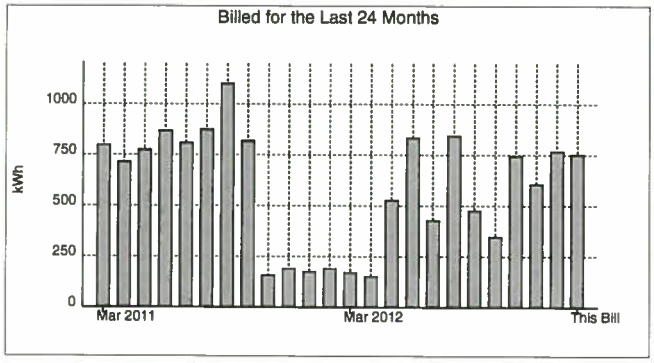
Bill Number: 35634219
Bill Date: 02/14/2013

123 MAIN ST
ESKO MN

Residential Service Rate: BOS
31 days

Next Scheduled Meter Read: 03/04/2013

Meter #	Start Date	Start Read	Read Code	End Date	End Read	Read Code	Usage
196099	01/03/13	11,505	regular	02/03/13	12,255	regular	750 Kilowatt Hours (kWh) used



The average kWh per day for this meter is 24
For the same period last year it was 6
The average daily cost for this meter is $2.48

Service Charge		8.00
300 kWh @ $0.05098	15.29	
200 kWh @ $0.06735	13.47	
250 kWh @ $0.08168	20.42	
Total Energy Charge for 750 kWh		49.18
Affordability Surcharge		0.51
Renewable Adjustment 750 kWh @ $0.00149		1.12
Transmission Adjustment 750 kWh @ $0.00033		0.25
Boswell 4 Plan Adjustment 750 KWH @ $0.00141		1.06
Resource Adjustment		13.01
MISO Admin Credit 750 kWh @ -$0.00144		1.08-
Minnesota Sales Tax (6.875%)		4.95
Total charge this service agreement		**77.00**

New Line Item

Fuels used to generate electricity have different costs, reliability and air emissions. For more information, call Minnesota Power at 218-722-2625 or 1-800-228-4966, or visit www.mnpower.com. You may also contact the Minnesota Department of Commerce at www.commerce.state.mn.us; or the Minnesota Pollution Control Agency at www.pca.state.mn.us/programs/electricity.html.

MOVING? Please call 1-800-228-4966 in advance. Thank you!

Changing your name, phone number, or just the mailing address?
Please fill out and check box on reverse side.

Name change:_____ Reason why_____

New phone number:_____

New mailing address:_____

City_____ State_____ Zip code_____

REQUIRED: Home #:_____ Cell #:_____

Work #:_____ Account#:_____

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

AFFIDAVIT OF SERVICE VIA ELECTRONIC FILING

Susan Romans of the City of Duluth, County of St. Louis, State of Minnesota, says that on the 7th day of March, 2013, she served Minnesota Power's Cost Recovery Petition in Docket No. E015/M-12-920 to the Minnesota Public Utilities Commission and the Energy Resources Division of the Minnesota Department of Commerce of via electronic filing. The remaining parties on the attached service list were served as so indicated on the list.

/s/ Susan Romans
Susan Romans

Subscribed and sworn to before
me this 7th day of March, 2013.

/s/ Jodi Nash
Notary Public - Minnesota
My Commission Expires Jan. 31, 2015

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Julia	Anderson	Julia.Anderson@ag.state.mn.us	Office of the Attorney General-DOC	1800 BRM Tower 445 Minnesota St St. Paul, MN 551012134	Electronic Service	No	GEN_SL_Minnesota Power_Minnesota Powers Service List BOS 4 Cost Recover
Christopher	Anderson	canderson@allete.com	Minnesota Power	30 W Superior St Duluth, MN 558022191	Electronic Service	No	GEN_SL_Minnesota Power_Minnesota Powers Service List BOS 4 Cost Recover
Sharon	Ferguson	sharon.ferguson@state.mn.us	Department of Commerce	85 7th Place E Ste 500 Saint Paul, MN 551012198	Electronic Service	No	GEN_SL_Minnesota Power_Minnesota Powers Service List BOS 4 Cost Recover
Burl W.	Haar	burl.haar@state.mn.us	Public Utilities Commission	Suite 350 121 7th Place East St. Paul, MN 551012147	Electronic Service	No	GEN_SL_Minnesota Power_Minnesota Powers Service List BOS 4 Cost Recover
Margaret	Hodnik	mhodnik@mnpower.com	Minnesota Power	30 West Superior Street Duluth, MN 55802	Electronic Service	No	GEN_SL_Minnesota Power_Minnesota Powers Service List BOS 4 Cost Recover
Lori	Hoyum	lhoyum@mnpower.com	Minnesota Power	30 West Superior Street Duluth, MN 55802	Electronic Service	No	GEN_SL_Minnesota Power_Minnesota Powers Service List BOS 4 Cost Recover
Anne	Jackson	anne.jackson@state.mn.us	MN Pollution Control Agency	520 Lafayette Road St Paul, MN 55115	Electronic Service	No	GEN_SL_Minnesota Power_Minnesota Powers Service List BOS 4 Cost Recover
Jodi	Johnson	jljohnson@mnpower.com	Minnesota Power	30 W. Superior St. Duluth, MN 55802	Paper Service	No	GEN_SL_Minnesota Power_Minnesota Powers Service List BOS 4 Cost Recover
John A.	Knapp	jknapp@winthrop.com	Winthrop & Weinstine	Suite 3500 225 South Sixth Street Minneapolis, MN 554024629	Electronic Service	No	GEN_SL_Minnesota Power_Minnesota Powers Service List BOS 4 Cost Recover
Michael	Krikava	mkrikava@briggs.com	Briggs And Morgan, P.A.	2200 IDS Center 80 S 8th St Minneapolis, MN 55402	Electronic Service	No	GEN_SL_Minnesota Power_Minnesota Powers Service List BOS 4 Cost Recover
Douglas	Larson	dlarson@dakotaelectric.com	Dakota Electric Association	4300 220th St W Farmington, MN 55024	Electronic Service	No	GEN_SL_Minnesota Power_Minnesota Powers Service List BOS 4 Cost Recover

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
James D.	Larson		Avant Energy Services	200 S 6th St Ste 300 Minneapolis, MN 55402	Paper Service	No	GEN_SL_Minnesota Power_Minnesota Powers Service List BOS 4 Cost Recover
John	Lindell	agorud.ecf@ag.state.mn.us	Office of the Attorney General-RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012130	Electronic Service	No	GEN_SL_Minnesota Power_Minnesota Powers Service List BOS 4 Cost Recover
Susan	Ludwig	sludwig@mnpower.com	Minnesota Power	30 West Superior Street Duluth, MN 55802	Electronic Service	No	GEN_SL_Minnesota Power_Minnesota Powers Service List BOS 4 Cost Recover
Pam	Marshall	pam@energycents.org	Energy CENTS Coalition	823 7th St E St. Paul, MN 55106	Paper Service	No	GEN_SL_Minnesota Power_Minnesota Powers Service List BOS 4 Cost Recover
David	Moeller	dmoeller@allete.com	Minnesota Power	30 W Superior St Duluth, MN 558022093	Electronic Service	No	GEN_SL_Minnesota Power_Minnesota Powers Service List BOS 4 Cost Recover
Andrew	Moratzka	apm@mcmlaw.com	Mackall, Crounse and Moore	1400 AT&T Tower 901 Marquette Ave Minneapolis, MN 55402	Paper Service	No	GEN_SL_Minnesota Power_Minnesota Powers Service List BOS 4 Cost Recover
Thomas	Scharff	thomas.scharff@newpagecorp.com	New Page Corporation	P.O. Box 8050 610 High Street Wisconsin Rapids, WI 544958050	Electronic Service	No	GEN_SL_Minnesota Power_Minnesota Powers Service List BOS 4 Cost Recover
Ron	Spangler, Jr.	rlspangler@otpco.com	Otter Tail Power Company	215 So. Cascade St. PO Box 496 Fergus Falls, MN 565380496	Electronic Service	No	GEN_SL_Minnesota Power_Minnesota Powers Service List BOS 4 Cost Recover
Eric	Swanson	eswanson@winthrop.com	Winthrop Weinstine	225 S 6th St Ste 3500 Capella Tower Minneapolis, MN 554024629	Electronic Service	No	GEN_SL_Minnesota Power_Minnesota Powers Service List BOS 4 Cost Recover
Karen	Turnboom	karen.turnboom@newpagecorp.com	NewPage Corporation	100 Central Avenue Duluth, MN 55807	Electronic Service	No	GEN_SL_Minnesota Power_Minnesota Powers Service List BOS 4 Cost Recover

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Laurance R.	Waldoch		Lindquist & Vennum	4200 IDS Center 80 South 8th Street Minneapolis, MN 554022274	Paper Service	No	GEN_SL_Minnesota Power_Minnesota Powers Service List BOS 4 Cost Recover