BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Beverly Jones Heydinger	Chair
David C. Boyd	Commissioner
Nancy Lange	Commissioner
J. Dennis O'Brien	Commissioner
Betsy Wergin	Commissioner

In the Matter of Minnesota Power's Petitions for approval of its Boswell Energy Center Unit 4 Environmental Retrofit Project and Boswell 4 Environmental Improvement Rider

ISSUE DATE: November 5, 2013

DOCKET NO. E-015/M-12-920

ORDER APPROVING BOSWELL ENERGY CENTER UNIT 4 RETROFIT PROJECT AND AUTHORIZING RIDER RECOVERY

PROCEDURAL HISTORY

On August 31, 2012, Minnesota Power (or the Company) filed a petition for approval of its mercury emissions reduction plan for the Boswell Energy Center Unit 4 electric generating station (Boswell 4) under the Minnesota Mercury Emissions Reduction Act (MERA).[1] The Company proposed to retrofit Boswell 4 to reduce multiple pollutants and to comply with MERA and federal environmental regulations.

On March 1, 2013, the Minnesota Pollution Control Agency issued its environmental assessment of the Company's proposed mercury emissions reduction plan.

On March 7, 2013, Minnesota Power filed a petition seeking approval of a rider to recover the cost of the proposed retrofit (Boswell 4 rider).

Between May 14 and 31, 2013, the Commission received comments and/or reply comments from the following parties on Minnesota Power's Boswell 4 retrofit and rider petitions:

- The Minnesota Department of Commerce (the Department)
- The Large Power Intervenors[2]

[1] Minn. Stat. §§ 216B.68–.688.

[2] An ad hoc group of industrial customers consisting in this case of ArcelorMittal USA; Boise, Inc.; Enbridge Energy, Limited Partnership; Hibbing Taconite Company; Mesabi Nugget Delaware, LLC; NewPage Corporation; PolyMet Mining, Inc.; Sappi Cloquet, LLC; UPM – Blandin Paper Company; USG Interiors, LLC; United States Steel Corporation; and United Taconite, LLC.

- The Minnesota Chamber of Commerce (the Chamber)
- The Environmental Intervenors[3]
- Minnesota Power

On July 23, 2013, the Commission solicited supplemental comments on the merits of the Boswell 4 retrofit plan. Between August 9 and 19, 2013, the following parties filed supplemental comments and/or reply comments:

- The Chamber
- The Environmental Intervenors
- The Department
- The Minnesota Pollution Control Agency
- Minnesota Power
- The Large Power Intervenors

On September 25, 2013, the Commission met to consider the matter.

FINDINGS AND CONCLUSIONS

I. Statutory Background

A. Mercury Emissions-Reduction Plans

MERA requires public utilities that own or operate coal-fired power plants within Minnesota to develop plans to install in those plants emissions-control equipment that reduces mercury emissions by at least 90 percent by specified dates.[4] Utilities with wet-scrubbed units, such as Minnesota Power, were required to submit their plans by December 31, 2009. These plans must provide for mercury emissions reduction to be implemented by December 31, 2014.

MERA creates an alternative process for utilities with fewer than 200,000 customers that own two wet-scrubbed units at a qualifying facility.[5] Minnesota Power has opted to submit its mercury-reduction plan under this process. Under the alternative process, a utility must file a plan for mercury emissions reduction at one of its two wet-scrubbed units by December 31, 2007, with a target implementation date of December 31, 2010.[6] The utility then has until July 1, 2015, to file its plan for the second unit, with a target implementation date of December 31, 2018. A utility

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[3] A group of environmental organizations consisting of Izaak Walton League – Midwest Office, Fresh Energy, the Sierra Club, and the Minnesota Center for Environmental Advocacy.

[4] Minn. Stat. § 216B.682.

[5] Minn. Stat. § 216B.6851.

[6] Minnesota Power filed its emissions-reduction plan for Boswell Energy Center Unit 3 on October 30, 2006. The Commission approved that plan on October 26, 2007. Docket No. E-015/M-06-1501.

filing a mercury-reduction plan under this process must also submit one or more alternative plans designed to come as near as technically possible to achieving the 90 percent goal without imposing excessive costs on its customers.[7] The utility may count mercury emissions reductions at other, "supplemental" units toward the 90 percent goal.[8]

Mercury-reduction plans are filed simultaneously with the Commission and the Minnesota Pollution Control Agency (MPCA). The MPCA evaluates proposed plans and submits its evaluation to the Commission. The MPCA must evaluate plans in at least four areas:

(1) the plan's compliance with the Act's requirements;

(2) the environmental and health benefits of each option proposed or considered by the utility, including any benefits from reductions in pollutants other than mercury;

(3) the technical feasibility and cost-effectiveness of the technologies the utility proposes to use or considered using; and

(4) the overall appropriateness of the proposed plan.[9]

The Commission considers the statutory factors listed above, as well as a plan's likely impact on the competitiveness of customer rates. The Commission must approve the mercury-control alternative that the Commission reasonably believes will come closest to achieving mercury reductions of 90 percent in a manner that provides for increased environmental and public health benefits without imposing excessive costs on the utility's customers.[10]

B. Other Environmental Improvement Plans

To encourage utilities to address multiple pollutants, MERA allows a utility required to submit a mercury-reduction plan to also propose plans for investments in pollution control equipment needed to comply with other state or federal emissions-control statutes or regulations. The utility must show that these investments will provide for increased environmental and public health benefits, do not impose excessive costs on ratepayers, and will achieve at least the pollution control required by applicable state or federal regulations.

For example, Minnesota Power must soon comply with Mercury and Air Toxics Standards (MATS) issued by the U.S. Environmental Protection Agency (EPA). MATS requires coal-fired generators with a capacity greater than 25 megawatts to meet numerical emissions limits for mercury, filterable particulate matter (PM), and hydrochloric acid (HCl) by 2015 or, with an extension from MPCA, by 2016.

[7] Minn. Stat. § 216B.6851, subd. 4.

[8] *Id.*, subd. 4.

[9] Minn. Stat. § 216B.684.

[10] Minn. Stat. § 216B.6851, subd. 6(b).

As with mercury-reduction plans, the MPCA evaluates environmental improvement plans and provides a report to the Commission. The Commission considers the overall environmental and public health benefits, total costs, and competitiveness of customer rates. The Commission approves the plan if the Commission finds that it meets the requirements of the statute.[11]

C. Emissions-Reduction Riders

MERA allows utilities to file for approval of emissions-reduction riders pursuant to section 216B.1692, subdivision 3, to recover the cost of mercury control and other environmental improvement initiatives.[12] The Commission's approval of an emissions-reduction plan includes approval of any associated emissions-reduction rider.[13]

II. Minnesota Power's Retrofit Proposal

Boswell Energy Center Unit 4 is located in Cohasset and was placed into service in 1980. With 585 megawatts of net capacity, it is the largest baseload generator in Minnesota Power's fleet.

Boswell 4 currently uses a scrubber with a wet particulate removal system for PM control coupled with a spray tower for sulfur dioxide (SO_2) control. Although the existing scrubber is not designed for mercury control, it provides limited mercury reduction as a co-benefit. Minnesota Power proposes to retrofit Boswell 4 with a circulating dry scrubber system that will meet not only MERA requirements but also mercury, PM, and HCl emissions standards mandated by MATS. Powdered activated carbon will remove approximately 90 percent of mercury content from Boswell 4's flue gas. Minnesota Power also expects an 80 percent reduction from current levels of particulate emissions and a 39 percent reduction from current levels of SO_2 emissions.

Minnesota Power considered various alternative retrofit technologies for reducing mercury and other pollutants. Minnesota Power also considered alternatives to a retrofit, including delaying the retrofit, shutting down Boswell 4 and replacing it with natural gas generation, repowering the unit with natural gas, and doing nothing. Ultimately, the Company rejected all these alternatives for various reasons, including high capital costs, site constraints, high operation and maintenance (O&M) costs, lower efficiency, and inability to fully comply with current or future emissions-control regulations.

Minnesota Power estimates the capital cost of the retrofit to be $349.8 million with incremental O&M costs of $12.5 million annually. The Company proposes to recover these costs through an emissions-reduction rider and to allocate the revenue requirement among retail customer classes using the "peak and average demand" method. The Company also proposes to file adjusted retail allocation factors if any large-power or wholesale customer's load changes by 100 megawatts or more. Minnesota Power requests a variance from Minn. R. 7825.3600 to allow it to provide updated rate book pages in a later compliance filing.

[11] Minn. Stat. § 216B.686.

[12] Minn. Stat. § 216B.683, subd. 1.

[13] Minn. Stat. § 216B.683, subd. 3(b).

Per MERA, the MPCA reviewed Minnesota Power's proposal. The MPCA concluded that the proposed project is technically feasible in that it is likely to achieve 90 percent mercury reduction at Boswell 4, is cost effective compared with other mercury-control options, and is appropriate to accomplish the objectives of reducing emissions of mercury and other pollutants under MERA.

III. The Parties' Positions

A. The Department

The Department concluded that the Boswell 4 retrofit is reasonable for meeting the requirements of MERA and MATS and recommended that the Commission approve the retrofit, approve the associated rider, and direct Minnesota Power to make annual rate factor adjustment filings.

The Department also noted that Minnesota Power has received a notice from the EPA alleging violations of the New Source Review requirements of the Clean Air Act at the Boswell Energy Center. The Company is in discussions with EPA to resolve the issues raised in the notice. The Department recommended that the Commission direct Minnesota Power to keep the Commission apprised of the status of the notice of violation and identify and explain any costs associated with the notice for which the Company seeks recovery in the future.

B. The Large Power Intervenors

The Large Power Intervenors supported the retrofit plan but argued that Minnesota Power's rider allocates too great a share of the costs to large power customers. The Large Power Intervenors claim that the Commission set residential rates below cost in 1994, 2008, and 2009. As a result, they claim, rates for the large power class are approximately six to seven percent above cost. The Large Power Intervenors recommended that the Commission allocate project costs among the utility's retail customer classes based on each class's contribution to the 12-month average coincident peak demand.

The Large Power Intervenors also requested that the Commission set the threshold for triggering rate-balancing adjustments at 10 megawatts rather than 100 megawatts as proposed by Minnesota Power. At the Commission meeting, all parties, including Minnesota Power, agreed that a 10-megawatt threshold was appropriate.

Finally, the Large Power Intervenors requested that Commission cap the amount of Boswell 4 retrofit costs that Minnesota Power can recover through its proposed rider at the cost estimate in the Company's petition. The Company does not oppose this request.

C. The Chamber

The Chamber also supported the retrofit proposal as providing a positive economic impact to northeastern Minnesota. However, like the Large Power Intervenors, the Chamber would prefer that Minnesota Power use an inter-class cost-allocation method based on each class's share of the coincident peak demand. The Chamber argues that such an allocation would align rates more closely with class cost of service and keep commercial electric rates competitive.

D. The Environmental Intervenors

The Environmental Intervenors argued that Minnesota Power could likely achieve compliance with MATS and MERA without the expense of a full retrofit. They also argued that Minnesota Power and the MPCA failed to give adequate consideration to natural gas replacement options for Boswell 4. The Environmental Intervenors recommended that the Commission order Minnesota Power to reanalyze potential compliance options in light of the State of Minnesota's policy preference for cleaner energy and carbon-emissions-reduction goals.

IV. Commission Action

A. Emissions-Reduction Plans Approved

In reviewing Minnesota Power's mercury emissions-reduction plan for Boswell 4, the Commission has considered the environmental and health benefits of the proposed retrofit, the MPCA's determination of technical feasibility, competitiveness of customer rates, and the cost-effectiveness of the Company's proposal in light of the MPCA's review, as required by Minn. Stat. § 216B.6851. The Commission concludes that Minnesota Power's proposal will come closest of the feasible alternatives to achieving a total mercury emissions reduction of 90 percent in a manner that provides for increased environmental and public health benefits without imposing excessive costs on Minnesota Power's customers.

The Commission has also reviewed and evaluated Minnesota Power's plan to reduce emissions of pollutants other than mercury pursuant to Minn. Stat. § 216B.686, subd. 4. Having considered the overall environmental and public health benefits, the total costs of the project on a stand-alone basis, and the reasonableness of customer rates, the Commission finds that the Company's plan will provide for increased environmental and public health benefits, does not impose excessive costs on ratepayers, and will achieve at least the pollution control required by applicable state and federal regulations.

The Environmental Intervenors argued that Minnesota Power could likely achieve the requisite levels of mercury by adding powdered activated carbon injection to Boswell 4 and counting mercury emissions reductions at supplemental units. However, Minnesota Power tested carbon injection with Boswell 4's existing scrubber in 2009 and was unable to achieve sustained 90-percent mercury removal or maintain compliance with exhaust opacity limits. For this reason, Minnesota Power deemed it necessary to install both carbon injection and a fabric filter.

The Environmental Intervenors also argued that Minnesota Power and the MPCA did not give adequate consideration to natural gas replacement alternatives. However, Minnesota Power considered two natural gas replacement options: (1) building a new natural gas facility and (2) acquiring an ownership share in a larger natural gas facility. Minnesota Power conducted a sensitivity analysis and found that the proposed retrofit tended to cost less than the replacement options under a variety of future conditions. The Department agreed that retiring Boswell 4 is not a cost-effective option. The Commission concludes that further analysis of natural gas options is not warranted at this time.

For the foregoing reasons, the Commission will approve the Company's plans to reduce mercury and other pollutants by retrofitting Boswell 4. As recommended by the Department, the Commission will require Minnesota Power to file biennial reports on the status of the project, with the first report due January 1, 2014. The Commission will also require the Company to include an update on its discussions with the EPA to resolve the notice of violation and identify and explain any costs related to the notice of violation included in its rate factor adjustment filings or other rate proceedings.

B. Rider Approved with Modifications

The Commission finds that Minnesota Power's proposed rider, with the modifications discussed below, meets the requirements of Minn. Stat. § 216B.1692, subd. 5(b) in that it (1) allows the utility to recover costs of qualifying emissions-reduction projects net of revenues attributable to the project; (2) allows an appropriate return on investment associated with qualifying emissions-reduction projects at the level established in the public utility's last general rate case; (3) allocates project costs appropriately between wholesale and retail customers; (4) recovers costs from retail customer classes in proportion to class energy consumption; and (5) terminates recovery once the costs of qualifying projects have been fully recovered.

The Commission further finds that the proposed rider, as modified, complies with Minn. Stat. § 216B.1692, subd. 5(d) since it does not include any costs of a proposed project in the emissions-reduction rider that are not directly allocable to reduction of emissions.

To protect ratepayers from potential cost overruns, the Commission will cap the total amount that Minnesota Power may recover through the Boswell 4 rider at the amount stated in the Company's petition. The Commission concurs with Minnesota Power and the Department that the cost of the retrofit should be allocated among the customer classes according to the peak and average demand method. This method is reasonable and consistent with the methodology used to allocate costs in base rates.

Finally, the Commission will require Minnesota Power to make annual rate factor adjustment filings, including adjusted retail allocation factors if any large power or wholesale customer's load changes by 10 megawatts or more, as agreed to by the parties.

C. Variance Granted

Minnesota Power seeks a variance from rule 7825.3600 to allow the Company to provide revisions to the service schedules affected by the Boswell 4 rider in a subsequent compliance filing.

Minn. R. 7825.3600 requires utilities to file revised rate-book pages reflecting proposed rate changes, identifying those pages that were not changed. Each revised page of the rate book must contain the information required for each page of the rate book in a format consistent with the currently filed rate book. Minnesota Power's rider petition clearly identifies the proposed language that will be added to specified service schedules. However, it has not incorporated this language into revised service schedules as contemplated by rule 7825.3600.

The Commission may vary any of its rules upon making the following findings:

- enforcement of the rule would impose an excessive burden upon the applicant or others affected by the rule;
- granting the variance would not adversely affect the public interest; and
- granting the variance would not conflict with standards imposed by law.[14]

The Commission will vary Minn. R. 7825.3600 to allow Minnesota Power to submit revised rate book pages in a compliance filing, based on the following findings:

- Enforcing Minn. R. 7825.3600 would impose an excessive burden on Minnesota Power by requiring it to update multiple service schedules with identical language before the Commission has approved the Boswell retrofit plan and rider.
- Varying Minn. R. 7825.3600 would not adversely affect the public interest because the proposed changes will not take effect until the Commission completes its review of the Boswell 4 retrofit plan and rider, and ratepayers will have notice of the affected rates once Minnesota files the revised pages.
- Varying Minn. R. 7825.3600 would not conflict with any standards imposed by law, since Minn. R. 7825.3600 is a rule and may be varied under Minn. R. 7829.3200.

ORDER

1. The Commission hereby grants Minnesota Power's Boswell 4 retrofit petition, with the following conditions:

    a. Minnesota Power shall file biennial reports on the status of the Project, with the first report due January 1, 2014.

    b. The Company shall include in its annual rate factor adjustment filing an update on its discussions with the EPA to resolve the notice of violation and shall identify and explain any costs related to the notice of violation included in its rate factor adjustment filings or other rate proceeding.

2. The Commission approves the Boswell 4 rider and proposed rate design, with the following conditions:

    a. Minnesota Power shall make annual rate factor adjustment filings.

    b. Minnesota Power's recovery under the rider shall be limited to the amount specified in its rider petition.

    c. All costs are subject to review in the Company's annual rate factor adjustment filing.

[14] Minn. R. 7829.3200.

3. The Commission approves the use of the peak and average method for allocating the revenue requirement to the customer classes.

4. The Commission reduces Minnesota Power's proposed threshold for triggering the filing of adjusted retail allocation factors to 10 megawatts.

5. The Commission grants Minnesota Power's request for a variance from Minn. R. 7825.3600.

6. This Order shall become effective immediately.

BY ORDER OF THE COMMISSION

Burl W. Haar
Executive Secretary

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