

IOWA UTILITIES BOARD
Energy Section

Docket No.: EPB-2014-0156
Utility: MidAmerican Energy Company
File Date: April 1, 2014
Memo Date: March 3, 2015

TO: The Board

FROM: Kerri Johannsen and Ellen Shaw

SUBJECT: MidAmerican 2014 Emission Plan and Budget and Partial Settlement Agreement

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I. Background

Iowa Code § 476.6(20) requires Iowa's rate-regulated utilities to develop a multi year emissions plan and associated budget for managing regulated emissions from their coal-fired facilities in a cost-effective manner, with updates filed at least every two years.

On April 1, 2014, MidAmerican Energy Company (MidAmerican) filed an updated Emissions Plan and Budget (Plan Update or EPB). On August 7, 2014, the Iowa Department of Natural Resources, Air Quality Bureau (IDNR) filed a letter stating the IDNR believes the filing meets the applicable state environmental requirements. On December 3, 2014, the Board issued an "Order Requiring Additional Information." MidAmerican responded to the order on December 18, 2014. On January 8, 2015, MidAmerican filed a Joint Motion and Partial Settlement Agreement between the company, the Consumer Advocate Division of the Department of Justice (Consumer Advocate), and the Environmental Law & Policy Center and the Iowa Environmental Council (jointly the "Environmental Intervenors").

MidAmerican's 2014 Plan Update describes emission reduction projects that will occur beginning in 2014 and through 2023. However, the Plan Update officially only covers activities and associated budgets for 2014–2016. The 2014 Plan Update is mostly informational since all projects included were approved in previous EPBs and for some projects in MidAmerican's most recent rate case, Docket No. RPU-2013-0004.

For the 2014–2016 time period, the Plan Update includes [REDACTED] in capital expenditures for new and ongoing projects. MidAmerican's share of this capital is [REDACTED]. The Plan Update also includes [REDACTED] in O&M expenses with a [REDACTED] MidAmerican share. MidAmerican and Interstate Power and Light Company (IPL) jointly own the Ottumwa Generating Station (OGS, a/k/a Ottumwa Unit 1); thus, each utility has a share of capital and O&M expenses for the unit.

For the ten-year period 2014–2023, the Plan Update projects capital expenditures of [REDACTED], of which MidAmerican's share is [REDACTED]. Operations and maintenance costs for this time period total [REDACTED], with MidAmerican's share [REDACTED].

II. Legal Standards

Iowa Code § 476.6(20) requires Emissions Plan and Budget filings.

20. *Electric power generating facility emissions.*

a. It is the intent of the general assembly that the state, through a collaborative effort involving state agencies and affected generation owners, provide for compatible statewide environmental and electric energy policies with respect to regulated emissions from rate-regulated electric power generating facilities in the state that are fueled by coal. Each rate-regulated public utility that is an owner of one or more electric power generating facilities fueled by coal and located in this state on July 1, 2001, shall develop a multiyear plan and budget for managing regulated emissions from its facilities in a cost-effective manner.

(1) The initial multiyear plan and budget shall be filed with the board by April 1, 2002. Updates to the plan and budget shall be filed at least every twenty-four months.

(2) Copies of the initial plan and budget, as well as any subsequent updates, shall be served on the department of natural resources.

(3) The initial multiyear plan and budget and any subsequent updates shall be considered in a contested case proceeding pursuant to chapter 17A. The department of natural resources and the consumer advocate shall participate as parties to the proceeding.

(4) The department of natural resources shall state whether the plan or update meets applicable state environmental requirements for regulated emissions. If the plan does not meet these requirements, the department shall recommend amendments that outline actions necessary to bring the plan or update into compliance with the environmental requirements.

b. The board shall not approve a plan or update that does not meet applicable state environmental requirements and federal ambient air quality standards for regulated emissions from electric power generating facilities located in the state.

c. The board shall review the plan or update and the associated budget, and shall approve the plan or update and the associated budget if the plan or update and the associated budget are reasonably expected to achieve cost-effective compliance with applicable state environmental requirements and federal ambient air quality standards. In reaching its decision, the board shall consider whether the plan or update and the associated budget reasonably balance costs, environmental requirements, economic development potential, and the reliability of the electric generation and transmission system.

d. The board shall issue an order approving or rejecting a plan, update, or budget within one hundred eighty days after the public utility's filing is deemed complete; however, upon good cause shown, the board may extend the time for issuing the order as follows:

(1) The board may grant an extension of thirty days.
(2) The board may grant more than one extension, but each extension must rely upon a separate showing of good cause.

(3) A subsequent extension must not be granted any earlier than five days prior to the expiration of the original one-hundred-eighty-day period, or the current extension.

e. The reasonable costs incurred by a rate-regulated public utility in preparing and filing the plan, update, or budget and in participating in the proceedings before the board and the reasonable costs associated with implementing the plan, update, or budget shall be included in its regulated retail rates.

f. It is the intent of the general assembly that the board, in an environmental plan, update, or associated budget filed under this section by a rate-regulated public utility, may limit investments or expenditures that are proposed to be undertaken prior to the time that the environmental benefit to be produced by the investment or expenditure would be required by state or federal law.

III. Summary of MidAmerican's 2014 Plan Update

A. Current Air Emission Rules

Public Health Standards Drive New Emissions Regulations

National Ambient Air Quality Standards (NAAQS)

The U.S. Environmental Protection Agency (EPA) established NAAQS under the Clean Air Act for six criteria pollutants. The Agency sets both a primary (public health-based) and secondary (public welfare-based) standard for each pollutant. The NAAQS are implemented through enforceable source-specific emission limitations set by the states in state implementation plans.

The NAAQS are periodically reviewed by EPA and the agency has recently proposed or promulgated rules to revise standards for fine particulate matter (PM_{2.5}), ozone, sulfur dioxide (SO₂), and nitrogen dioxide (NO₂). MidAmerican describes the NAAQS in detail. However, MidAmerican states that the current regulations should not impact MidAmerican's facilities. The company points out that as EPA lowers standards in the future, they have the potential to impact the company.

Key Regulatory Drivers for Current Emission Reduction Plans

Emission regulations that do impact MidAmerican's 2014–2016 Budget Update include: the Clean Air Interstate Rule (CAIR) and the Cross-State Air Pollution Rule (CSAPR), the Mercury and Air Toxics Standards (MATS), and New Source Review requirements for greenhouse gases.

CAIR and CSAPR

Clean Air Interstate Rule (CAIR): CAIR became effective July 11, 2005. The law was based on the determination by the EPA that emissions from twenty-eight states (including Iowa) and the District of Columbia contribute to nonattainment of the NAAQS for PM_{2.5} and /or eight-hour ozone in downwind states. The pollutants covered by the rule include SO₂ (a precursor to PM_{2.5}) and NO_x (a precursor to ozone). The EPA used the existing SO₂ allowances created and allocated to states for the acid rain program to establish a trading program under CAIR. CAIR was slated to be implemented in two phases: the first phase would address NO_x beginning in 2009 and SO₂ beginning in 2010 and the second phase would address both pollutants at a stricter level beginning in 2015. Overall, the rule would reduce SO₂ emissions by 70 percent and NO_x by more than 60 percent from 2003 levels.

The IDNR adopted rules to implement CAIR in May 2006. In July 2008 the U.S. Court of Appeals for the D.C. Circuit (D.C. Circuit) vacated CAIR in its entirety and remanded the rule to the EPA to be re-written. In December 2008, on re-hearing, the court instead remanded the rule without vacatur, meaning the rule would stay in place until a new rule could be implemented.

Cross-State Air Pollution Rule (CSAPR): In July 2011, the EPA finalized CSAPR as a replacement rule for CAIR. CSAPR set state-specific limits on SO₂ and NO_x. Similar to CAIR, CSAPR was to be implemented in two phases, beginning in 2012 and 2014, and set stricter limits for summer emissions of NO_x for some states ("Group 1" states), including Iowa, and less stringent limits for "Group 2" states. Allowance trading was permissible within Group 1 and Group 2, but not between them. Trading among states even within the groups was also limited, with no state allowed to exceed its SO₂ and NO_x emission budgets by more than 18 percent in a given year (21 percent for ozone-season NO_x). Finally, rather than using existing acid rain allowances for compliance, CSAPR created a new set of allowances.

With the final CSAPR rule having been released in July 2011 and compliance required January 1, 2012, compliance timelines were extremely short. On December 30, 2011, the D.C. Circuit stayed CSAPR and reinstated CAIR for the duration of the stay. In August of 2012, the D.C. Circuit vacated CSAPR, leaving CAIR in place. The EPA petitioned the U.S. Supreme Court for a ruling on CSAPR. Arguments were held on December 10, 2013. Until the court renders a decision, MidAmerican plans to comply with CAIR.¹

¹ IUB staff notes that CSAPR was upheld by the U.S. Supreme Court on April 29, 2014. On June 26, 2014, EPA filed a motion with the D.C. Circuit to lift the stay on CSAPR. On

Regional Haze: A separate Clean Air Act regulation requires all states to address the impact of emissions (including SO₂ and NO_x, among others) in order to achieve natural visibility in federal Class I areas by 2064. While Iowa has no Class I areas, it consulted with surrounding states to determine the impact of Iowa emissions on those states. EPA had determined that CSAPR compliance would be sufficient to demonstrate compliance with the regional haze regulation, but with the stay of CSAPR, it is possible that additional emissions reductions could be required.

Mercury and Air Toxics Standards (MATS): The MATS rule requires reduction of mercury and other hazardous air pollutant (HAP) emissions on a unit-by-unit basis using best available control technology (BACT). The rule impacts roughly 1,100 coal-fired generating units in the U.S. The rule was developed as a replacement for the Clean Air Mercury Rule (CAMR) which was vacated by the courts in February 2008.

The MATS rule became final on April 16, 2012, and compliance is required within three years of that effective date (April 16, 2015). Permitting authorities under Title V of the Clean Air Act (in Iowa, the IDNR) can grant extensions of up to one year to address a range of situations, such as permitting or procurement challenges. The EPA has also issued an enforcement policy that allows units critical for reliability to obtain an extension of one additional year through an Administrative Order issued by the EPA. Such an order would not protect the utility from third-party enforcement actions.

Lawsuits challenging MATS were filed, divided between the rules for new plants and those for existing plants. The new-units litigation was remanded to EPA for reconsideration while the existing-units litigation was argued before the D.C. Circuit on December 10, 2013.²

New Source Review: The New Source Review provisions of the Clean Air Act require that any facility that emits regulated pollutants in excess of a specified threshold is required to obtain a permit from the EPA or the state regulator (IDNR) prior to building or making a physical or operational change to a stationary source that increases emissions by a certain amount. Projects subject to New Source Review require a Prevention of Significant Deterioration (PSD) permit prior to construction. The permitting process includes an analysis to determine BACT and subsequent

October 24, 2014, the D.C. Circuit lifted the stay and the rule became effective January 1, 2015. MidAmerican, in its response to Board questions filed December 18, 2014, anticipates that allowance allocations and the ability to bank and carry forward allowances will allow the company to be in compliance with both phases of CSAPR.

² IUB staff notes that on April 15, 2014, the D.C. Circuit upheld MATS. On November 25, 2014, the U.S. Supreme Court announced that it will review the decision by the D.C. Circuit.

installation of the emissions controls determined to be the best available. MidAmerican is required by the IDNR to assess the potential for triggering PSD permitting related to its emissions reduction projects.

Greenhouse Gases: Greenhouse gas legislation and litigation is an issue that could have significant implications for MidAmerican. Comprehensive climate change legislation has not been adopted at the federal level. However, in response to the Supreme Court's decision in Massachusetts v. Environmental Protection Agency, the EPA issued the "endangerment finding" which found that greenhouse gas emissions threaten the public health and welfare. Effective January 2, 2011, the "Tailoring Rule" made greenhouse gases a regulated new source review pollutant for certain large facilities under the PSD permitting program. This includes MidAmerican's facilities that have the potential to increase greenhouse gas emissions by 75,000 tons per year and would only apply when a new source is constructed or an existing facility is modified. In February of 2014, the U.S. Supreme Court heard arguments challenging the Tailoring Rule. The court's decision is pending.³

On March 27, 2012, the EPA issued proposed New Source Performance Standards (NSPS) for new fossil-fueled electric generating units. The proposed standards would limit carbon dioxide emissions to an average of 1,000 pounds per megawatt hour for new natural gas facilities and 1,100 pounds per megawatt hour for new coal-fired facilities. The rule was not finalized. In June 2013, President Obama announced a National Climate Action Plan with the goal of reducing U.S. carbon dioxide emissions by 17 percent from 2005 levels by 2020. Part of the plan called for EPA to re-propose the NSPS for new electric generating units, which they did in September 2013. The agency is also working to propose NSPS for new plants by June 2014.⁴ Under the Climate Action Plan, the existing sources rule must be finalized by June 2015 and ready for state implementation by June 2016.

B. Emerging Regulations

MidAmerican's EPB summarizes three emerging regulations that may impact operations at its coal-fueled facilities, but do not impact the 2014–2016 Plan Update. These include: regulation of coal combustion by-products, the cooling water intake structures rule, and effluent limit

³ IUB staff notes that on June 23, 2014, the Supreme Court issued a ruling partially invalidating the Tailoring Rule. MidAmerican's response to Board questions filed on December 18, 2014, commented that the decision does not impact MidAmerican's 2014 Budget Update.

⁴ IUB staff notes that these proposed rules, under Section 111(d) of the Clean Air Act, were issued on June 2, 2014.

guidelines. Detailed descriptions of these regulations can be found in Appendix A.

C. MidAmerican's Budget

MidAmerican seeks approval of costs for environmental upgrades at its coal energy generating units (EGUs) through December 31, 2016, which total \$165.6 million [REDACTED] for new and ongoing capital investments and [REDACTED] for O&M expenses. The ten-year plan (2014–2023) details both new and ongoing environmental capital investments to MidAmerican's fleet of coal-fired power plants which total [REDACTED] of which MidAmerican's share is [REDACTED]. Ten year O&M costs are estimated to be [REDACTED] with a [REDACTED] MidAmerican share.

In addition to the costs summarized above, MidAmerican owns 52 percent of the OGS which is operated by IPL. Costs for emissions equipment at OGS are included in IPL's Plan Update in Docket No. EPB-2014-0150. MidAmerican will be required to pay its share (52 percent) of costs at OGS that are approved by the Board in that docket. MidAmerican's share of proposed capital costs in IPL's 2014–2016 budget is [REDACTED]. IPL also provides a 15-year budget which allocates a total of [REDACTED] in capital costs to MidAmerican. The O&M costs at OGS to be paid by MidAmerican include [REDACTED] in the 2014–2016 timeframe. (IPL breaks out O&M costs to show specific chemical costs. The [REDACTED] figure combines chemical and other O&M costs). MidAmerican's 15-year O&M costs at OGS are [REDACTED].

MidAmerican states that its 2014 Plan Update fully complies with Iowa Code § 476.6(21).⁵ It does so by demonstrating compliance with applicable state and federal environmental requirements in a cost-effective manner and balancing costs, environmental requirements, economic development potential, and reliability.

Status of 2012–2014 Budget Update

MidAmerican's 2012 Plan Update, filed and approved in Docket No. EPB-2012-0156 included two projects that were expected to be completed and in service during the 2012–2014 plan period and two that were expected to get underway within that period.

1. Neal Energy Center Unit 4 (Neal 4) scrubber and baghouse started construction in 2011. Project was completed and in

⁵ IUB staff notes that after MidAmerican's filing, Iowa Code § 476.6 was renumbered for the 2015 edition, and the relevant paragraph is now (20).

SO₂ Reduction

The scrubber and baghouse projects at Neal 3 and Neal 4, described above, will

Development of 2014 Budget

MidAmerican continues to evaluate least-cost alternatives for meeting emission targets. MidAmerican previously installed dry scrubbers and baghouses at Louisa and WSEC 3. MidAmerican's investigations of how best to meet additional SO₂ reduction requirements under CAIR resulted in its decision to also install these controls at Neal Units 3 and 4.

The scrubber and baghouse projects will also reduce emissions of particulate matter and acid gases and reduce opacity, which will help MidAmerican prepare to meet MATS requirements at those plants.

MidAmerican chose to install SO₂ controls at Louisa and WSEC 3 prior to the implementation of CAIR in order to bank SO₂ allowances. This strategy allowed it to phase in emission controls at other facilities and avoid entering into contracts when equipment demand and labor costs would be at their peak.

Budgeted NO_x Controls

Installation of low-NO_x burners and over-fire air systems was completed across MidAmerican's coal fleet in 2008. The projects have significantly reduced NO_x emissions and helped MidAmerican meet initial CAIR requirements for NO_x at the least cost. SNCR is another method to reduce NO_x and the technology will be utilized at Neal 3 and 4, as described above.

Budgeted Mercury Controls

The MATS rule requires compliance by April 16, 2015 (with the option for a one-year extension). In order to meet this 2015 requirement, MidAmerican will install ACI equipment at Louisa, WSEC 3, Neal 3, and Neal 4 as described above.

Fabric filters installed after the ACI system increase the effectiveness of the ACI.⁹ Filters were installed as part of the scrubber and baghouse projects at WSEC 3, Louisa, and Neal 4 and MidAmerican also plans to

install these filters at Neal 3.¹⁰ With these filters, MidAmerican projects that the units will meet the reduced mercury emissions levels.

Budgeted Greenhouse Gas Emission Controls

Emission control projects at Neal 3 and 4 triggered a Prevention of Significant Deterioration (PSD) permitting review which required a Best Available Control Technology (BACT) review by IDNR. The analysis found steam turbine upgrades to be BACT. Installation of an upgraded low-pressure turbine at Neal 4 was completed in December 2013 and is scheduled to be completed at Neal 3 by May 2014.¹¹ Both projects were projected to improve the units' heat rates by [REDACTED].

Operations and Maintenance Costs

MidAmerican states that projected O&M expenses included in this Budget Update are related to the dry scrubber and baghouse operations at WSEC 3, Neal 3, and Louisa with some also associated with the emission control projects at Neal 3 and 4 starting in late 2014. [REDACTED]

Description of 2014 Budgeted Emission Control Technologies

Brief descriptions of the technologies that MidAmerican proposes to install during the 2014–2016 time period can be found in Appendix B.

MidAmerican's 2014 Budget Supporting Detail

Compliance with CAIR and MATS will significantly affect MidAmerican's coal-fired fleet, necessitating not only large capital investments, but increased O&M costs as well.

MidAmerican will time the installation of the emission control equipment with planned outages. The short time-frames for compliance with new, proposed, and expected rules may cause many units across the country to be installing controls at the same time. However, MidAmerican believes that phasing in controls helps to balance demand for labor and equipment, ensure the company supplies needed generation, and minimize costs to consumers. MidAmerican believes additional emission controls may be required in future plans.

The table below is a list of MidAmerican's currently operating coal units, their generating capacity, and the company's ownership share.

¹⁰ MidAmerican's response to Board questions filed December 18, 2014, stated that this equipment was in commercial operation as of May 20, 2014.

¹¹ Turbine efficiency project was in commercial operation as of May 20, 2014.

**MidAmerican-Operated Coal-Fueled Plants:
Generating Capacity and Percent
Ownership**

| Unit | Net Capacity (MW) | MidAmerican Ownership |
|------------------|----------------------------------|----------------------------------|
| Neal Unit 1 | 135 | 100.00% |
| Neal Unit 2 | 295 | 100.00% |
| Neal Unit 3 | 515 | 72.00% |
| Neal Unit 4 | 644 | 40.57% |
| Louisa | 745 | 88.00% |
| Riverside Unit 3 | 5 | 100.00% |
| Riverside Unit 5 | 130 | 100.00% |
| WSEC Unit 1 | 45 | 100.00% |
| WSEC Unit 2 | 88 | 100.00% |
| WSEC Unit 3 | 690 | 79.10% |
| WSEC Unit 4 | 800 | 59.66% |

Units with costs that are included in this EPB include:

WSEC Unit 3: ACI for mercury control scheduled to be operational April 16, 2015; on-going O&M costs related to scrubber, baghouse, and ACI.

Louisa: ACI for mercury control scheduled to be operational April 16, 2015; on-going O&M costs related to scrubber, baghouse, and ACI.

Neal Unit 3: Dry scrubber, baghouse, turbine upgrade, and SNCR, which were expected to be installed and operational in May 2014.¹² The Plan Update also includes ACI for mercury control that is projected to be operational in March 2015 as well as on-going O&M costs related to scrubber, baghouse, and ACI.

Neal Unit 4: Dry scrubber, baghouse, and turbine efficiency upgrade, all operational as of December 2013; SNCR that was operational as of February 2014; and ACI that was operational as of October 30, 2014. Also includes on-going O&M costs related to scrubber, baghouse, and ACI.

¹² Scrubber, baghouse, and turbine upgrade were completed as of May 20, 2014. SNCR was completed as of August 13, 2014.

Equipment Bidding and Installation Strategy

MidAmerican plans to continue to use a competitive bidding process for procurement of equipment and installation services. The company plans to continue to complete installations during planned outages.

MidAmerican bid the scrubber and baghouse projects at Neal 3 and 4 as a combined award in order to negotiate a lower price and ensure similar equipment at both generating facilities. Having similar equipment is more efficient because it allows the facilities to share spare parts, reducing overall operation and maintenance costs. A similar process was used for the ACI equipment at Lousia, WSEC 3, and Neal 3 and 4.

[REDACTED]

Other Plan Considerations

To develop the 2014 EPB, MidAmerican also considered economic development potential and the reliability of the electric generation and transmission system.

Economic Development

Reducing emissions will maximize the opportunity for Iowa to avoid air quality non-attainment status and so increase economic development potential. Certain emissions are capped by EPA on a geographical basis. Reducing EGU emissions creates space for other industries in a region to emit more, allowing them to grow.

A significant number of jobs are created during the installation of environmental control equipment and some additional plant operations and maintenance staff have been hired by MidAmerican as a result of the projects.

Transmission System Reliability

[REDACTED]

Generation System Reliability

[REDACTED]



Maystrick Testimony

O&M Costs

The dry scrubber and baghouse, SNCR, and ACI equipment all require chemical reagents to reduce emissions. These costs are on-going and classified as O&M. The more efficient turbines installed at Neal 3 and 4 are not expected to require maintenance costs that exceed the old turbines, so MidAmerican is not asking for additional O&M for those projects.

Mclvor Testimony

Compliance with CSAPR

If the Supreme Court lifts the stay on CSAPR, MidAmerican's past installation of projects to reduce NO_x and SO₂ leaves the company reasonably well-positioned to comply.¹³

Compliance with MATS

EPA's deadline for MATS compliance is April 16, 2016. WSEC 4 is already fully compliant and, following installation of ACI, WSEC 3, Louisa, Neal 3, and Neal 4 will also be in compliance. MidAmerican determined that based on economic and other considerations, it is in the best interest of customers to comply with MATS and other environmental regulations by ceasing the burning of coal at Neal Energy Center Units 1 and 2, Walter Scott Jr. Energy Center Units 1 and 2, and Riverside Generating Station. Riverside is permitted to run on natural gas and MidAmerican plans to run the facility in that manner.

IV. IDNR Testimony

On August 7, 2014, the IDNR filed testimony stating it had reviewed MidAmerican's Plan Update and determined that, in conjunction with continued compliance with all permitting requirements and permit conditions, the filing meets applicable state environmental requirements for regulated emissions.

IDNR commented that the Plan Update accurately reflects the current status of federal requirements at the time of MidAmerican's filing. IDNR

¹³ On October 24, 2014, the D.C. Circuit lifted the stay on CSAPR and the rule became effective January 1, 2015. In addition to the projects listed above, MidAmerican also anticipates that allowance allocations and the ability to bank and carry forward allowances will allow the company to be in compliance with both phases of CSAPR.

provided updates on a few environmental regulations since MidAmerican's filing: The U.S. Supreme Court issued a ruling to uphold CSAPR, and the EPA issued a pre-publication release of the federal register notice for the Cooling Water Intake Structures Rulemaking under Section 316(b) of the Clean Water Act.

V. Joint Motion and Partial Settlement Agreement

On January 8, 2015, a Partial Settlement Agreement between MidAmerican, Consumer Advocate, and the Environmental Intervenors was filed. The Partial Settlement Agreement states that all parties agree that the 2014–2016 Plan Update complies with Iowa Code §476.6(21). The Parties have entered into the Partial Settlement Agreement as a fair and reasonable resolution of the issues at hand without resolving specific issues of law or fact other than those explicitly set out in the settlement.

MidAmerican agrees to file with the Board, and furnish to the Parties, annual updates that describe actions taken by MidAmerican to implement the 2014 Plan Update. The agreement provides for the specific format and timing of the updates. The intervening Parties may investigate compliance with the activities described in the Plan Update. Consumer Advocate may investigate activities approved in any prior EPB.

In addition, the Parties agree to meet twice a year to discuss any changes in environmental regulations that may impact MidAmerican's emission control strategies. The Partial Settlement Agreement provides specifically for discussion of the EPA's 111(d) rules regulating greenhouse gases from existing power plants. Discussions may include any analysis MidAmerican has conducted regarding carbon dioxide controls and other 111(d) compliance options they are considering for inclusion in a future EPB. MidAmerican also agrees to provide the Intervenors with information about environmental regulations that change during the course of the 2014–2016 Plan Update that will have a material impact on MidAmerican's EPB. Finally, the Parties agree that any O&M costs related to turbine efficiency upgrades shall not be included in any EPB. Any discussions conducted under this Partial Settlement Agreement are for informational purposes only.

The terms of the Partial Settlement Agreement are to be implemented upon Board approval and continue through December 31, 2016. Nothing in the agreement shall impact the IDNR's responsibilities under Iowa Code § 476.6(21).

VI. Analysis

Iowa Code § 476.6(21)"d" provides that the Board shall issue an order approving or rejecting a plan, update, or budget within 180 days after the public utility's filing is deemed complete. Staff recommends that the Board deem MidAmerican's 2014 Plan Update, as supplemented by its answer to Board questions filed on December 18, 2014, complete.

Concurrently with deeming the filing complete, staff recommends the Board find that MidAmerican's 2014 Plan Update and supplemental information complies with the requirements of Iowa Code § 476.6(21) by addressing cost-effectiveness, environmental requirements, economic development and the reliability of the electric generation and transmission system.

Neal Units 3 and 4

In MidAmerican's most recent rate case, Docket No. RPU-2013-0004, the Board allowed in rate base the scrubber and baghouse, turbine upgrade, and SNCR projects at Neal Units 3 and 4 upon completion of the projects. Some of these project expenditures occur within the time frame of this Plan Update. However, because those expenditures have not changed from what was approved in the rate case, they are not subject to Board review at this time.

The ACI projects at Neal 3 and 4 were approved in the 2012 EPB. [REDACTED]
[REDACTED] they are not subject to Board review at this time.

Louisa and WSEC

The ACI projects at Louisa and WSEC 3 were approved in the 2008 EPB, but delayed due to the vacatur of CAMR. In the 2012 Plan Update, MidAmerican stated that it will move forward with the projects to comply with the MATS rule. The ACI equipment is scheduled to be in service by April 16, 2015, in time to comply with the rule. Because the ACI capital costs have not increased since their approval in the 2012 EPB, they are not subject to Board approval in this docket.

[REDACTED]
[REDACTED] That is outside the scope of this EPB and approval of this Plan Update does not constitute approval of that project.

OGS

Although MidAmerican pays for 52 percent of the costs of environmental retrofits at OGS, consistent with its ownership share, the plant is operated

by IPL. Environmental costs at OGS are included in IPL's Plan Update in Docket No. EPB-2014-0150. MidAmerican's portion of these costs is [REDACTED] in the 2014–2016 timeframe. IPL also provides a 15-year budget which allocates a total of [REDACTED] in capital costs to MidAmerican. The O&M costs at OGS that will be paid by MidAmerican include [REDACTED] in the 2014–2016 timeframe. (IPL breaks out O&M costs to show specific chemical costs. The [REDACTED] figure combines chemical and other O&M costs). MidAmerican's 15-year O&M costs at OGS are [REDACTED].

In MidAmerican's recent rate case, Docket No. RPU-2013-0004, the company asked the Board to include the capital costs of the OGS scrubber, baghouse, and ACI in its rate base. The Board granted the request with the condition that the third year of the rate increase granted in the docket could not be implemented until MidAmerican demonstrated that the equipment at OGS was in service. On December 29, 2014, MidAmerican made a compliance filing in Docket No. RPU-2013-0004 that stated the equipment was in service.

O&M

[REDACTED]

[REDACTED] This is an issue the Board may want to evaluate when reviewing the 2016 Plan Update.

Staff believes that the Partial Settlement is reasonable. The Periodic Reports that MidAmerican is to file between biennial Plan Updates are to explain how its actions are reasonable and how MidAmerican minimizes cost incurred as the company implements its plan and budget. The parties will exchange information on potential changes in state and federal environmental regulations and potential emissions control measures during the periodic meetings.

VII. Recommendation

Staff believes that MidAmerican's 2014 Plan Update and the Partial Settlement Agreement adequately address the issues of cost-effectiveness, environmental requirements, economic development, and the reliability of the electric generation and transmission system.

Staff recommends the Board direct General Counsel to prepare an order for the Board's consideration: (1) finding MidAmerican's Electric Generation Facility Budget Update to be complete and (2) approving the 2014 Plan Update and granting the Joint Motion and Partial Settlement Agreement filed by MidAmerican Energy Company, the Consumer

Advocate Division of the Department of Justice, the Iowa Environmental Council, and the Environmental Law & Policy Center.

RECOMMENDATION APPROVED

IOWA UTILITIES BOARD

/KRJ

/s/ Elizabeth S. Jacobs 3-4-15
Date

/s/ Nick Wagner 3/9/15
Date

/s/ Sheila K. Tipton 3-5-2015
Date

Appendix A ***Emerging Regulations***

Coal combustion byproducts rule: The rule was proposed by EPA in May of 2010 and offered two options for regulation. The first would regulate coal ash as a hazardous waste and the second would impose minimum standards for ash handling. Either option would result in more stringent regulatory requirements for existing, new, and expanded surface impoundments. MidAmerican operates eight surface impoundments and four landfills that contain coal combustion by-products. The new regulations could impact these facilities.

Cooling water intake rule: In March 2011 the EPA proposed a rule to regulate water intake structures at existing power plants that withdraw more than 2 million gallons per day from waters of the U.S. and use at least 25 percent of that water for cooling. The purpose of the rule is to improve water intake mechanisms to decrease the trapping of organisms against intake screens (impingement) and the drawing of organisms into the facility (entrainment). The rule will impact all of MidAmerican's facilities except Louisa, Ottumwa, and Walter Scott Jr. Unit 4, which have cooling towers.¹⁴

Effluent Limit Guidelines: In June 2013 the EPA proposed new effluent limitation guidelines which laid out eight regulatory alternatives with four identified as preferred alternatives. The EPA is currently negotiating an extension on a settlement agreement with environmental groups that required them to issue a final rule by May 22, 2014.

¹⁴ The final rule was issued on May 19, 2014.

Appendix B

Description of 2014 Budgeted Emission Control Technologies

Dry Scrubbers use a lime reagent to form calcium hydroxide slurry, which is injected into the flue gas stream upstream of a baghouse. The slurry reacts with the SO₂ to form a solid by-product which is collected in the bottom of the scrubber and in the baghouse. This process typically removes 90 percent of SO₂ from the flue gas stream.

Selective Non-Catalytic Reduction (SNCR) is a technology that injects ammonia into the flue gas where the ammonia reacts with the NO_x to form nitrogen and water. SNCR systems typically reduce NO_x emissions by 20 to 30 percent.

Activated Carbon Injection (ACI) removes mercury by injecting porous powdered carbon into the flue gas. When used with a baghouse, it has been shown that ACI removes up to 90 percent of the mercury in the flue gas stream. The combination of ACI with a scrubber and baghouse system optimizes mercury reduction.

Turbine Efficiency Upgrades can include steam cycle improvements, which allow the unit to generate more energy per Btu input, or boiler cycle improvements, which reduce the quantity and/or energy of flue gas exiting the boiler cycle per Btu of heat input. According to MidAmerican, typical heat rate improvements from turbine efficiency projects can range from 1-3 percent and generally offset the heat rate degradation associated with the additional plant auxiliary power required to operate dry scrubbers and baghouses.