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MidAmerican Energy Company

Electric Power Generation Facility Emissions Plan

**For January 1, 2014 Through
December 31, 2023**

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Executive Summary

While many new regulations have been proposed or implemented since the filing of the last Environmental Plan and Budget Update in April 2012, MidAmerican has been able to accommodate these regulatory changes by the diligent implementation of its Environmental Plan despite the uncertainty created by litigation and regulatory delays. As has been the case in previous Environmental Plan and Budget filings, planning for the implementation of federal requirements to reduce air emissions, including sulfur dioxide, nitrogen oxides and mercury, in a disciplined manner has allowed MidAmerican to implement emission reduction projects that allow the company to comply with the environmental requirements in a cost-effective manner.

The 2014 Environmental Plan discusses the key new requirements under the Mercury and Air Toxics Standards that form the basis for the projects anticipated to proceed under this biennial plan, as well as providing updates on key environmental issues.

I. The Regulation of Power Plant Emissions

The production of electricity from fossil fuels results in emissions of regulated pollutants. At the federal level, fossil-fueled units are regulated under the Clean Air Act. Under the Clean Air Act, the New Source Performance Standards establish technology-based emission limits applicable to new units, as well as units that have been reconstructed or modified. MidAmerican Energy Company (MidAmerican) units are also subject to the Prevention of Significant Deterioration permitting process. The Prevention of Significant Deterioration's goal is to maintain attainment status for each of the six criteria pollutants¹ in air regions. The program is designed to prevent air quality in attainment areas from deteriorating from current acceptable levels. In addition to the six criteria pollutants, hazardous (toxic) air pollutants are addressed by the National Emission Standards for Hazardous Air Pollutants. These are additional federal emission limitations established for less widely emitted, but hazardous or toxic, air pollutants.

Major amendments to the Clean Air Act were made in 1990. While leaving the basic processes of the original act intact, the 1990 amendments added significant controls on various key pollutants. The Title IV program, also known as the Acid Rain Program, required significant reductions of sulfur dioxide and nitrogen oxide emissions. The Acid Rain Program was the first cap-and-trade program for a pollutant, in this case sulfur dioxide. The Title V program was also part of the 1990 amendments. Although the Title V program created no new environmental reduction requirements, it requires all major sources of emissions to have an operating permit. Federal emissions rules are developed and promulgated at the federal level but require states to similarly adopt the rules via rulemaking. Permitting and enforcement of these rules are usually then delegated to state agencies.

¹ Carbon monoxide, lead, nitrogen dioxide, particulate matter, ozone, and sulfur dioxide.

In order to ensure that MidAmerican can meet the needs of its customers in a cost-effective manner, the company actively participates in the regulatory process and assesses anticipated environmental regulations to determine cost-effective methods to timely comply with those regulations. The following represents the current state of air emission reduction requirements from power plants. This analysis is limited to programs with the potential to significantly affect existing, as well as new, electric generating units.

A. Public Health Standards Drive New Emissions Regulations

Under the Clean Air Act, the National Ambient Air Quality Standards were established based on the concept of nationwide air quality goals and individual state plans to meet those goals. The U.S. Environmental Protection Agency has promulgated National Ambient Air Quality Standards for six criteria pollutants. For each of these pollutants, the agency sets standards, known as primary standards, at a level designed to protect health as well as secondary standards at a level designed to protect public welfare. The National Ambient Air Quality Standards are implemented through enforceable source-specific emission limitations established by the states in state implementation plans.

National Ambient Air Quality Standards are periodically reviewed by the U.S. Environmental Protection Agency to determine whether they are protective of human health and the environment. The agency has recently proposed or fully promulgated revised standards for several criteria air pollutants including fine particulate matter, ozone, sulfur dioxide and nitrogen dioxide. These lowered standards have the potential to drive emissions regulations and resulting reductions as detailed in the following section.

1) Particulate Matter

Particle pollution, also called particulate matter, is a complex mixture of extremely small particles and liquid droplets in the air. The U.S. Environmental Protection Agency first issued standards for particulate matter in 1971 and revised the standards in 1987 and 1997. On October 17, 2006, the agency issued new National Ambient Air Quality Standards for particulate matter. The final standards addressed two categories: 1) fine particulate matter (PM_{2.5}), which are 2.5 micrometers in diameter and smaller; and 2) inhalable coarse particles (PM₁₀) which are smaller than 10 micrometers. The agency strengthened the 24-hour fine particle standard from the 1997 level of 65 micrograms per cubic meter to 35 micrograms per cubic meter, and retained the annual fine particle standard at 15 micrograms per cubic meter. The agency also retained the existing national 24-hour coarse particle standard of 150 micrograms per cubic meter and revoked the annual coarse particle standard.

As a result of the imposition of these more stringent standards, more counties across the United States were classified as not attaining the standards, referred to as non-attainment areas. The U.S. Environmental Protection Agency was required to designate the status of attainment, unclassifiable, and non-attainment areas by December 2008, with final designations by November 2009. On December 22, 2008, portions of Scott and Muscatine Counties in Iowa, and Rock Island County in Illinois, were declared in non-attainment for the agency's 24-hour standard for fine particulate matter. Monitoring data from the years 2005–2007 were used to make the agency's non-attainment designation.

More recent 2006-2008 data from air monitors in Muscatine and Scott counties showed that all of the monitors that violated the National Ambient Air Quality Standards for fine particles over the period 2005-2007 met the standard. As a result of this updated data, the Iowa Department of Natural Resources petitioned the U.S. Environmental Protection Agency on February 11, 2009, to designate these areas back in attainment by rescinding previous actions designating portions of Scott and Muscatine counties as non-attainment areas. On October 8, 2009, the agency issued its final *Federal Register* notice designating all areas of Iowa in attainment.

On May 20, 2010, Iowa submitted its certified monitoring data for calendar year 2009. Based on the Environmental Protection Agency's review of the monitoring data from 2007-2009, the Environmental Protection Agency concluded that the Muscatine area monitor recorded data that violated the 24-hour standard for fine particulate matter. In July 2011, the Environmental Protection Agency concluded that the Iowa State Implementation Plan was substantially inadequate to maintain the National Ambient Air Quality Standards for fine particulate matter in the Muscatine area and, as a result, Iowa submitted revisions to its State Implementation Plan in February 2013 and is currently implementing the plan to bring Muscatine into attainment with the standard. In December 2013, the Iowa Department of Natural Resources made a recommendation to the Environmental Protection Agency that the Muscatine area be classified in non-attainment with the annual fine particulate matter standard based on a review of certified monitoring data for the calendar years 2010-2012. The Environmental Protection Agency is expected to respond to this recommendation by December 2014. However, fine particulate matter levels have dropped and Iowa may update its recommendation once certified monitoring data for the calendar year 2013 are available in May 2014. MidAmerican has not been notified by the Iowa Department of Natural Resources that emissions from any of its facilities cause or contribute to the high levels of fine particulate matter in the Muscatine area.

2) Ozone

On March 12, 2008, the U.S. Environmental Protection Agency issued final revised National Ambient Air Quality Standards for ozone. The agency's revised National Ambient Air Quality Standard for ozone was an eight-hour average of 0.075 parts per million for both the primary and secondary standards. The new standards took effect May 27, 2008. States originally had until March 12, 2009, to make recommendations to the U.S. Environmental Protection Agency as to whether an area should be designated attainment, non-attainment or unclassifiable. In May 2008, the revised ozone standard was challenged by states, industry stakeholders and environmental organizations. In March 2009, the Obama administration asked the D.C. Circuit Court of Appeal to delay the pending legal proceedings to allow the Environmental Protection Agency more time to determine whether to revise the previous ozone standards.

In January 2010, the U.S. Environmental Protection Agency proposed to replace the ozone standards of 0.075 parts per million for both primary and secondary standards, and set the primary health-based standard at a level between 0.060 and 0.070 parts per million measured over eight hours. However, in September 2011, President Obama requested that the Environmental Protection Agency withdraw the proposed ozone standard and allow the review of the standards to proceed through the regularly scheduled review in 2013 and the Environmental Protection Agency is proceeding with implementation of the March 2008 ozone

standards. In December 2011, the Environmental Protection Agency issued its response to states' recommendations on area attainment designations. The Environmental Protection Agency finalized attainment designations in 2012 and is currently reviewing the 2008 ozone standard with an update expected in late 2014. The state of Iowa is in attainment for the 0.075 parts per million ozone standard.

3) Sulfur Dioxide

In June 2010, the Environmental Protection Agency published a final rule establishing new primary sulfur dioxide National Ambient Air Quality Standards. The agency revised the primary sulfur dioxide standard by establishing a new one-hour standard at a level of 75 parts per billion and revoked the two existing primary standards of 140 parts per billion evaluated over 24 hours, and 30 parts per billion evaluated over an entire year. States are required to make adjustments to the existing monitoring network in order to ensure that monitors meeting the network design regulations for the new one-hour sulfur dioxide standard are sited and operational by January 1, 2013. Muscatine County in Iowa currently exceeds the new standard, based on monitoring data from 2007 to 2009; Linn County in Iowa is also projected to exceed the new standard in 2020.

While the specific impacts of the one-hour sulfur dioxide standard on the MidAmerican fleet are not fully known, MidAmerican's efforts to reduce sulfur dioxide emissions through the completed scrubber projects at Walter Scott Energy Center Units 3 and 4, Neal Unit 4 and Louisa Generating Station, in addition to the efforts underway to install controls at Neal Unit 3, are anticipated to position the company well to ensure that the ambient standards are not impacted by its facilities.

4) Nitrogen Dioxide

In January 2010, the U.S. Environmental Protection Agency finalized the first one-hour National Ambient Air Quality Standard for nitrogen dioxide at 0.10 part per million (100 parts per billion) while retaining the annual standard. The agency's final rule also expanded the air monitoring network for the pollutant, requiring additional monitors near roadways and in urban areas.

The Environmental Protection Agency published attainment designations that were effective February 29, 2012, indicating that based on air quality monitoring data, all areas of the country, including the state of Iowa, are designated as "unclassifiable/attainment" for the 2010 nitrogen dioxide national ambient air quality standard.

5) Lead

The Environmental Protection Agency promulgated a new National Ambient Air Quality Standard for lead in October 2008 of 0.15 micrograms per cubic meter on a rolling three-month time period. The 2008 standard is ten times more stringent than the previous standard. In November 2011, the Environmental Protection Agency issued a designation of nonattainment of the lead standard for a portion of Pottawattamie County, Iowa, based on monitoring data from calendar years 2008-2010.

Iowa was required to submit a State Implementation Plan by June 30, 2013. However, the SIP submittal has been delayed because the IDNR identified additional contributing sources of lead that need to be included in the plan. The revised plan is expected to be submitted by the summer of 2014. The Iowa Department of Natural Resources has indicated it believes the nonattainment is due to emissions from a source other than a MidAmerican facility, and MidAmerican does not believe there will be any impact on any of its facilities as a result of the failure to attain the lead standard.

B. Key Regulatory Drivers for Current Emission Reduction Plans

While the U.S. Environmental Protection Agency acted on multi-pollutant emission reduction requirements for electric utilities in 2005, and the Iowa Department of Natural Resources finalized the rules necessary to effectuate the emission reductions in May 2006, litigation over the Clean Air Interstate Rule and the Clean Air Mercury Rule resulted in the promulgation of new rules to effectuate emission reductions. The following discusses the relevant regulatory scenarios and their status.

1) Interstate Transport Rules

Clean Air Interstate Rule – The final Clean Air Interstate Rule, which has been described extensively in prior Emission Plans, became effective July 11, 2005, and was based on the U.S. Environmental Protection Agency’s determination that emissions from 28 states (including Iowa) and the District of Columbia contributed significantly to non-attainment of the National Ambient Air Quality Standards for fine particulate matter (PM_{2.5}) and/or eight-hour ozone in downwind states. Upwind states were required to include control measures to reduce emissions of sulfur dioxide (as a precursor to fine particulate matter), and/or nitrogen oxides (as a precursor to ozone), in an effort to assist the downwind nonattainment areas in achieving the National Ambient Air Quality Standards. In establishing the Clean Air Interstate Rule trading program for sulfur dioxide, the U.S. Environmental Protection Agency utilized the existing sulfur dioxide allowances created and allocated to sources in each state by Title IV of the Clean Air Act (Acid Rain Program). In states subject to the Clean Air Interstate Rule, covered facilities would have to surrender two allowances for each ton of sulfur dioxide emitted during the years 2010-2014 and surrender 2.86 sulfur dioxide allowances for each ton of sulfur dioxide emitted thereafter. The Clean Air Interstate Rule required emissions reductions to be addressed in two phases. The first phase of nitrogen oxides reductions commenced in 2009 and sulfur dioxide reductions in 2010; the second phase, covering both nitrogen oxides and sulfur dioxide emissions was required to be implemented in 2015. When fully implemented, power plant sulfur dioxide emissions under the Clean Air Interstate Rule would be reduced by 70% while emissions of nitrogen oxides would be reduced by more than 60% from 2003 levels.

The Iowa Department of Natural Resources finalized the State rules implementing the Clean Air Interstate Rule in May 2006. To implement the Clean Air Interstate Rule, the department adopted the U.S. Environmental Protection Agency’s model cap-and-trade programs for electric generating units for control of annual nitrogen oxides emissions, annual sulfur dioxide emissions and ozone season nitrogen oxides emissions. Specific allocations of sulfur dioxide allowances were not made under the Clean Air Interstate Rule because existing Title IV Acid Rain program allowances were utilized for compliance.

Clean Air Interstate Rule Litigation – In response to numerous challenges to the Clean Air Interstate Rule, the U.S. Court of Appeals for the D.C. Circuit issued a ruling July 11, 2008, vacating the Clean Air Interstate Rule in its entirety, concluding that since the U.S. Environmental Protection Agency had consistently treated the rule as a single regional program, all its components must stand or fall together. The court held that the approach to implement region-wide caps with no state-specific quantitative contribution determinations or emissions requirements was fundamentally flawed. The rule was remanded to the U.S. Environmental Protection Agency with the instruction that the agency must “redo its analysis from the ground up” and consider which states are included in the Clean Air Interstate Rule. On December 23, 2008, upon rehearing, the U.S. Court of Appeals for the D.C. Circuit remanded without vacature the Clean Air Interstate Rule. Because the rule was not vacated by the court, the Clean Air Interstate Rule remained in place until such time as the U.S. Environmental Protection Agency implemented a revised rule.

Cross-State Air Pollution Rule – On August 2, 2010, the U.S. Environmental Protection Agency published in the *Federal Register* a proposed Clean Air Interstate Rule replacement rule, referenced as the Clean Air Transport Rule. The rule was finalized July 6, 2011, and is referenced as the Cross-State Air Pollution Rule (“CSAPR”) which required electric generating units in 28 states to reduce sulfur dioxide emissions by 73% and nitrogen oxides emissions by 54% compared to 2005 levels. At the same time, the Environmental Protection Agency issued a supplemental proposal that would require six states, including Iowa, to make summertime nitrogen oxides emissions reductions under the CSAPR ozone-season control program; the final rule including Iowa in the ozone season nitrogen oxides reduction program was released December 15, 2011. The emission reduction requirements were to take place in two phases, with the first phase beginning January 1, 2012, for sulfur dioxide and annual nitrogen oxides reductions and May 1, 2012, for ozone season nitrogen oxides reductions. The second phase of sulfur dioxide reductions was scheduled to begin January 1, 2014. The emission reduction requirements under the CSAPR are required on a state-by-state basis as determined by the modeled contributions to nonattainment of the fine particulate matter and ozone standards in downwind states. Unlike the Clean Air Interstate Rule which required the surrender of Acid Rain sulfur dioxide allowances pursuant to a specified ratio of emissions and ton of emissions, the CSAPR established a new allowance trading program.

While both the Clean Air Interstate Rule and its successor, CSAPR, were designed to reduce nonattainment in downwind states, the CSAPR is slightly more stringent in its reductions requirements and imposes significant restrictions on the ability of facilities to utilize emission trading as a primary compliance mechanism. The CSAPR places limitations on the ability of affected sources to trade sulfur dioxide based on their groupings and respective reduction requirements. States were designated as Group 1 (16 states, including Iowa) and Group 2 (7 states) with the Group 1 states having more significant reduction requirements. Trading of allowances between Group 1 and Group 2 states is prohibited. In addition to these sulfur dioxide trading limitations, the final CSAPR includes an additional provision to limit the interstate trading of allowances.

Each state was provided an emission budget calculated to achieve emission reductions in downwind states. Recognizing that there may be variability in a state’s emissions, the CSAPR also addresses the potential to account for year-to-year changes based on power demand, timing

of maintenance activities, unexpected shutdowns of units, extreme weather conditions, sudden economic shocks and other unpredictable events, while taking into consideration the need to ensure that necessary emission reductions are made in upwind states through a variability limit. The variability limit was established as 18% of the state budget for the annual nitrogen oxides and sulfur dioxide Group 1 and Group 2 programs and 21% for the ozone season nitrogen oxides trading program. An example of this variability provision is if a state emission budget was 100 tons of sulfur dioxide, sources in the state could not purchase allowances that allow the state to emit more than 118 tons. The effect of this provision serves to effectively require sources in the state to rely upon their own emission reductions through the installation of controls or other compliance mechanism, rather than relying on other sources inside or outside the state to free up sufficient allowances to cover their emissions. If the state exceeds its budget plus the variability limit, responsibility for resulting additional allowance surrender is determined for the control period; failure of an owner or operator to surrender the required number of allowances is a violation of the Clean Air Act.

The U.S. Environmental Protection Agency issued a Federal Implementation Plan to implement the state budgets; each state is allowed to adopt its own State Implementation Plan to achieve compliance with the state emission budgets or allow the Federal Implementation Plan to remain in place. Given the short time frame within which State Implementation Plans were due to the Environmental Protection Agency, the Iowa Department of Natural Resources chose to allow the Federal Implementation Plan to remain in place.

With the final CSAPR having been released in July 2011 and compliance required January 1, 2012, compliance timeframes were extremely short. However, because MidAmerican's facilities were already subject to the requirements to reduce emissions under the Clean Air Interstate Rule and, with the company's previous efforts to reduce nitrogen oxides emissions through the installation of low-nitrogen oxides burners and over-fire air as well as the installation of scrubbers at the Louisa Generating Station and Walter Scott Units 3 and 4, in conjunction with the ongoing efforts to install controls at Neal Energy Center, MidAmerican was reasonably well positioned to comply with the CSAPR.

Multiple legal challenges were filed over the CSAPR in the D.C. Circuit Court of Appeals, which resulted in the court issuing a stay of implementation of the CSAPR December 30, 2011, pending consideration of the petitions for judicial review. During the pendency of the stay, the Environmental Protection Agency reinstated the requirements of the Clean Air Interstate Rule and in January 2012, the agency returned 2012 Clean Air Interstate Rule allowances to the previously existing accounts. In addition to the stay of the original CSAPR, the Environmental Protection Agency signed a notice January 26, 2012, indicating it would not require compliance with the CSAPR supplemental rule (which added Iowa in the ozone season nitrogen oxides emission reduction program) while the stay is in effect.

On August 21, 2012, the U.S. Court of Appeals for the D.C. Circuit vacated the Cross-State Air Pollution Rule, leaving the Clean Air Interstate Rule in place despite the court's previous determination that the latter rule is "fundamentally flawed". The Environmental Protection Agency and other groups petitioned the ruling to the U.S. Supreme Court and arguments were held December 10, 2013. Two of the questions before the court concerned whether the challenges to the Environmental Protection Agency's methodology for defining upwind states'

“significant contributions” were properly before the court given the failure of anyone to raise these objections; and whether an upwind state that is polluting a downwind state has any obligation under the Clean Air Act’s Good Neighbor provision until and unless the Environmental Protection Agency has quantified the upwind state’s contribution to the downwind state’s air pollution. Until the court renders a decision or the Environmental Protection Agency implements other emission reduction requirements, MidAmerican will continue to implement the planned controls to comply with the Clean Air Interstate Rule, some of which are ultimately required to also achieve compliance with the Mercury and Air Toxics Standards described herein.

Regional Haze-Related Issues – As a separate regulatory requirement, all states are required under the Clean Air Act to address the impact of emissions (including, among others, sulfur dioxide and nitrogen oxides) on visibility in federal Class I areas under the regional haze program, which addresses the national goal of achieving natural visibility conditions in Class I areas by 2064. The regional haze rules apply to specified sources, including electric generating units, constructed between 1962 and 1977 and each state, including Iowa, was required to submit a regional haze state implementation plan to the Environmental Protection Agency. MidAmerican has five best available retrofit technology-eligible units, including Walter Scott Unit 3 and Neal Units 1 through 4. While Iowa has no federal Class I areas, the state consulted with adjacent states to consider the impact of the emissions from Iowa sources on Class I areas in those states. In order to satisfy its regional haze obligations, Iowa relied on the emission reductions achieved under the Clean Air Interstate Rule and then the CSAPR, filing revisions to its state implementation plan on March 25, 2008, to address regional haze for the first implementation period through 2018. On December 30, 2011, just prior to the D.C. Circuit Court of Appeals imposing the stay on the implementation of the CSAPR, the Environmental Protection Agency proposed to determine that the emission reductions to be achieved under the CSAPR were better than the emission reductions that would be achieved if emission reductions were implemented through the regional haze program. In addition, on February 28, 2012, the Environmental Protection Agency proposed a limited approval of a revision to the Iowa state implementation plan for regional haze.

While unlikely, in the event that the Environmental Protection Agency ultimately determines that states cannot utilize the emission reductions anticipated to be achieved under the Clean Air Interstate Rule or CSAPR as the basis for complying with the regional haze requirements, it is possible that additional emission reductions could be required from MidAmerican’s best available retrofit technology-eligible units.

2) Mercury Regulation

Clean Air Mercury Rule – In May 2005, the U.S. Environmental Protection Agency published the Clean Air Mercury Rule. The final rule limited mercury emissions from new and existing coal-fueled power plants, and created a market-based cap-and-trade program that would permanently cap utility mercury emissions in two phases beginning in 2010, with emission reductions of 21%, and the second phase of reductions effective in 2018, with a 69% reduction, through a system of interstate trading of emission allowances. Under the national program, owners of coal-fueled electric generators were required to hold one allowance for each ounce of mercury emitted in a given year. Allowances could be readily transferred from one utility to

another and could be banked for use in later years. The Iowa Department of Natural Resources adopted the U.S. Environmental Protection Agency model rule July 12, 2006, and submitted to the agency a state implementation plan for approval August 3, 2006.

Clean Air Mercury Rule Litigation – A lawsuit was filed in March 2005 over the Clean Air Mercury Rule, alleging that the rule was inadequate and posed a serious threat to the health of children. Ultimately, on February 8, 2008, the D.C. Circuit held that the delisting of coal- and oil-fueled electric generating units from the list of sources whose emissions are regulated under section 112 of the Clean Air Act was unlawful. Specifically, the U.S. Environmental Protection Agency’s removal of these electric generating units from the section 112 list violated the Clean Air Act because section 112 (c)(9) requires the agency to make specific findings before removing a source listed under section 112. The agency never made such findings. Further, because coal-fueled electric generating units are listed sources under section 112, regulation of existing coal-fueled units’ mercury emissions under section 111 is prohibited, thereby invalidating the regulatory approach of the Clean Air Mercury Rule (i.e., cap-and-trade trading program). Therefore, the Clean Air Mercury Rule was vacated.

Petitions for rehearing en banc were filed on March 24, 2008. On May 20, 2008, the full U. S. Court of Appeals for the District of Columbia denied requests to reconsider the decision that vacated the rule. A petition for a writ of certiorari was filed to the U.S. Supreme Court to review the decision; the petition was denied February 23, 2009.

Mercury and Air Toxics Standards – As a replacement to the Clean Air Mercury Rule, the U.S. Environmental Protection Agency proposed and finalized the Mercury and Air Toxics Standards (MATS) to reduce emissions of mercury and other hazardous air pollutants (HAPs), under the Clean Air Act’s Maximum Achievable Control Technology provisions on a unit-by-unit basis without the ability to utilize an emission trading program for compliance. Approximately 1,100 existing coal-fueled generating units in the U.S. are impacted by the MATS.

The table below reflects the standards that must be met for existing coal-fueled units designed for coal > 8,300 British thermal units per pound and are applicable to MidAmerican’s units:

Constituent	Final Rule
Mercury	1.2 lb/TBtu
Acid Gases	0.0020 lb/mmBtu hydrochloric acid or 0.20 lb/mmBtu sulfur dioxide
Non-Mercury Metallics	Filterable PM 0.030 lb/mmBtu or test and meet standard for each of the listed constituents (including antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, manganese, nickel and selenium)

The MATS was published in the *Federal Register* February 16, 2012, and became final April 16, 2012. Section 112 of the Clean Air Act requires that existing sources must comply “as expeditiously as practicable, but in no event later than 3 years after the effective date of such standard.” Based on the date of the rule, April 16, 2015,² is the deadline for achieving compliance with the MATS rule. The Clean Air Act allows Title V permitting authorities such as

² The 3-year compliance deadline is based on the date that is 60 days after the publications of the MATS in the Federal Register.

the Iowa Department of Natural Resources the discretion to grant extensions on a case-by-case basis, to extend the compliance time up to one year if needed for the installation of controls. Permitting authorities have the discretion to use the extension to address a range of situations in which installation schedules may take more than three years, including: “staggering installation for reliability reasons or other site-specific challenges that may arise related to source-specific challenges that may arise related to source-specific construction, permitting, or labor, procurement or resource challenges.” In addition to the initial extension period, the Environmental Protection Agency issued an enforcement policy to identify a pathway for reliability critical units to obtain up to one more year to achieve compliance (i.e., up to five years for reliability critical units) which would be implemented through an Administrative Order, though such an Administrative Order would not protect against enforcement by third parties.

Multiple lawsuits the MATS were filed prior to the April 16, 2012, appeal deadline. The cases have been separated into those challenging the portions of the rule applicable to existing units and those portions of the rule applicable to new units. The new-units litigation been remanded to the EPA for reconsideration, while the existing-units litigation was argued before the D.C. Circuit Court of Appeals on December 10, 2013. An outcome in that case is still pending.

MidAmerican’s compliance with the Clean Air Interstate Rule and the Cross-State Air Pollution Rule with the installation of scrubbers and baghouses will assist in meeting the company’s compliance obligations under the MATS. MidAmerican assessed its compliance options for units not currently scheduled to have controls installed. MidAmerican determined that, based on economic and other considerations, it is in the best interest of its customers to not install environmental controls on five operating units. Therefore, by April 16, 2016, MidAmerican will cease burning coal at Neal Energy Center Units 1 and 2, Walter Scott Jr. Energy Center Units 1 and 2, and Riverside Generating Station. Riverside is fully permitted to operate on natural gas and will continue to be utilized in that manner.

II. Additional Drivers of Environmental Controls

A. New Source Review

Under existing New Source Review provisions of the Clean Air Act, any facility that emits regulated pollutants over a specified threshold is required to obtain a permit from the U.S. Environmental Protection Agency or a state regulatory agency prior to: 1) beginning construction of a new major stationary source of a New Source Review regulated pollutant; and 2) making a physical or operational change to an existing stationary source of such pollutants that increases certain levels of emissions, unless the changes are exempt under the regulations (including routine maintenance, repair and replacement of equipment). In general, projects subject to New Source Review regulations require pre-construction review and permitting under the Prevention of Significant Deterioration provisions of the Clean Air Act. Under the Prevention of Significant Deterioration program, a project that emits threshold levels of regulated pollutants must undergo an analysis to determine the best available control technology and evaluate the most effective emissions controls. These controls must be installed in order to receive a permit. Violations of New Source Review regulations, which may be alleged by the U.S. Environmental Protection Agency, states, environmental groups and others, potentially subject a utility to material fines

and other sanctions and remedies, including installation of enhanced pollution controls and funding of supplemental environmental projects.

While numerous changes have been proposed to the New Source Review rules and regulations over the last ten years, these changes have not been formally finalized in a manner that affects MidAmerican's analysis of triggers of the Prevention of Significant Deterioration requirements. As a result, as emission reduction projects proceed, MidAmerican is required to assess the potential for trigger of the Prevention of Significant Deterioration requirements. As discussed further below, one of the key developments in this area has been in the requirement to assess projects for potential increases in greenhouse gas emissions.

B. Greenhouse Gases

Greenhouse gas legislation and litigation represents an issue that could have future and potentially significant, implications for MidAmerican. Potential impacts are highly dependent on numerous factors, which include, but are not limited to, the magnitude and timing of greenhouse gas emissions reduction requirements; the cost, availability and effectiveness of emission control technology; the price and availability of offsets and allowances potentially used for compliance; government-imposed compliance costs; and the existence and nature of incremental cost recovery mechanisms.

Comprehensive Federal Climate Change Legislation – In April 2011, the United States House of Representatives voted 255-177 on a bill (H.R. 910) that would prevent the Environmental Protection Agency from regulating greenhouse gas emissions. No action has been taken by the Senate on the bill. While significant measures to regulate greenhouse gas emissions at the federal level were considered by the United States Congress in 2010, comprehensive climate change legislation has not been adopted.

Greenhouse Gas Regulation

- Federal Mandatory Reporting – In September 2009, the Environmental Protection Agency issued its final rule regarding mandatory reporting of greenhouse gas emissions, beginning January 1, 2010. Under the mandatory reporting rules, facilities that emit 25,000 metric tons or more per year of greenhouse gases are required to submit annual reports of their emissions to the Environmental Protection Agency.
- Permitting Requirements – In response to the U.S. Supreme Court's decision in 2007 in Massachusetts v. Environmental Protection Agency, in December 2009, the Environmental Protection Agency published its findings (i.e., the "endangerment finding") that greenhouse gas emissions threaten the public health and welfare and would pursue regulation of greenhouse emissions under the Clean Air Act. In addition, in June 2010, the Environmental Protection Agency issued the greenhouse gas "tailoring rule" to address permitting requirements for greenhouse gas emissions, initially in two phases. Effective January 2, 2011, greenhouse gases became a regulated new source review pollutant under the prevention of significant deterioration major source permitting program when greenhouse gases are emitted by new sources or when existing sources are modified. The greenhouse gas tailoring rule requires that existing major sources, including MidAmerican's facilities, which have the potential to increase their greenhouse

gas emission by 75,000 tons per year (measured in carbon dioxide equivalent), are required to conduct a best available control technology analysis for greenhouse gas emissions. The second phase of the tailoring rule became effective July 1, 2011, and applies to sources that are major sources only as a result of their potential to emit 100,000 tons of greenhouse gas emissions.

- **Greenhouse Gas Litigation** – The U.S. Environmental Protection Agency regulatory actions have spurred numerous legal challenges; the D.C. Circuit Court of Appeals upheld the endangerment finding and tailoring rule in June 2012. That ruling was subsequently appealed to the U.S. Supreme Court, which heard arguments in the tailoring rule case February 24, 2014. The sole question before the court was whether the Environmental Protection Agency permissibly determined that its regulation of greenhouse gas emissions from new motor vehicles triggered similar permitting requirements for stationary sources that emit greenhouse gases. The court’s decision in the case is pending.
- **New Source Performance Standards for Greenhouse Gas Emissions** – The Environmental Protection Agency proposed standards for new fossil-fueled sources March 27, 2012, that would limit carbon dioxide emissions to 1,000 pounds per megawatt hour. Comments on the rule submitted during the public comment period raised significant challenges and agency did not take final action on the proposal. In June 2013, President Obama introduced a National Climate Action Plan reaffirming his administration’s commitment to reduce the nation’s carbon dioxide emissions by 17% from 2005 levels by 2020. As part of this plan, the Environmental Protection Agency was directed to repropose the New Source Performance Standards for new units and expeditiously finalize the rule. The agency repropose standards for coal- and natural gas- fueled units in September 2013. In addition, the agency is working to propose New Source Performance Standards for existing units by June 2014. Under the climate action plan, the existing sources rule must be finalized by June 2015 and ready to implement by the states in June 2016.
- **State and Regional Climate Change Initiatives** – While many states have developed climate registries and climate action plans, few have progressed to require binding emission reductions. The Regional Greenhouse Gas Initiative in the Northeast and Mid-Atlantic states requires the reduction of carbon dioxide emissions from the power sector of 10% by 2018. In May 2011, New Jersey withdrew from participation in the Regional Greenhouse Gas Initiative. In the Western U.S., the Western Climate Initiative, which was established as a comprehensive regional effort with six U.S. member states and four Canadian provinces to reduce greenhouse gas emissions by 15% below 2005 levels by 2020 through a cap-and-trade program that includes the electricity sector; currently only California, British Columbia and Quebec are moving forward under the initiative. Neither the Midwest Greenhouse Gas Accord nor the policy options developed by the Iowa Climate Change Advisory Council have moved forward with any binding emission reductions in Iowa.

III. Emerging Environmental Regulations

There are a number of additional regulations on the horizon that may impact the costs of operating MidAmerican's coal-fueled facilities. While not subject to review in the current proceeding, MidAmerican provides the following for informational purposes.

A. Regulation of Coal Combustion Byproducts

In December 2008, an ash impoundment dike at the Tennessee Valley Authority's Kingston power plant collapsed after heavy rain, releasing a significant amount of fly ash and bottom ash, coal combustion byproducts, and water to the area surrounding the plant. In light of this incident, federal and state officials have called for greater regulation of the storage and disposal of coal combustion byproducts. In May 2010, the Environmental Protection Agency released a proposed rule to regulate the management and disposal of coal combustion byproducts, presenting two alternatives to regulation under the Resource Conservation and Recovery Act ("RCRA"). One option was to regulate coal combustion byproducts under RCRA Subtitle C as a hazardous or "special waste," which would require special handling of coal combustion byproducts from the point of generation and impose restrictions on disposal. The other option was to regulate coal combustion byproducts under RCRA Subtitle D through the establishment of minimum nationwide standards for the disposal of those materials. Under either option, surface impoundments utilized for coal combustion byproducts would have to be closed unless they met more stringent regulatory requirements. In addition, more stringent requirements would be implemented for new ash landfills and expansions of existing ash landfills.

MidAmerican operates eight surface impoundments and four landfills that contain coal combustion byproducts. These ash impoundments and landfills may be impacted by the coal combustion byproduct regulations, particularly if the materials are regulated under RCRA Subtitle C, which could impose significant additional costs associated with ash management activities at MidAmerican's coal-fueled generating facilities. MidAmerican participated in the public hearings and submitted written comments in the Environmental Protection Agency's rulemaking docket which closed for public input in November 2010. MidAmerican continues to monitor developments relating to the rule and legislation associated with the potential regulatory classification and the company has begun developing surface impoundment and landfill compliance plan options to ensure that physical infrastructure decisions are aligned with the potential outcomes of the rulemaking.

In April 2012, several environmental groups and two ash marketers filed suit against the Environmental Protection Agency, alleging that the agency has failed to perform a non-discretionary duty to promulgate regulations for coal combustion residuals under the Resource Conservation and Recovery Act. The parties reached a settlement agreement January 29, 2014, under which the Environmental Protection Agency must take final action by December 19, 2014, on the Subtitle D proposed option for coal combustion residuals. The consent decree does not require the Environmental Protection Agency to adopt a Subtitle D rule for coal combustion residuals, however. The costs of compliance with the coal combustion residual rule cannot be determined until the rule is finalized.

B. Cooling Water Intake Structures Rulemaking

The federal Water Pollution Control Act (“Clean Water Act”) establishes the framework for maintaining and improving water quality in the United States through a program that regulates, among other things, discharges to and withdrawals from waterways. In March 2011, the Environmental Protection Agency released a proposed rule under §316(b) of the Clean Water Act to regulate cooling water intakes at existing facilities. The proposed rule establishes requirements for all power generating facilities (not limited to fossil-fueled facilities) that withdraw more than two million gallons per day, based on total design intake capacity, of water from waters of the United States and use at least 25% of the withdrawn water exclusively for cooling purposes. The proposed rule includes impingement (i.e., when fish and other organisms are trapped against screens when water is drawn into a facility’s cooling system) mortality standards to be met through average impingement mortality or intake velocity design criteria. The proposal also includes entrainment (i.e., when organisms are drawn into the facility) standards to be determined on a case-by-case basis. The standards under the proposed rule are required to be met as soon as possible after the effective date of the final rule, but no later than eight years thereafter. The rule is required to be finalized by the Environmental Protection Agency by April 17, 2014.

All of MidAmerican’s coal-fueled generating facilities except Louisa, Ottumwa and Walter Scott, Jr. Unit 4, which have water cooling towers, withdraw more than two million gallons per day of water from waters of the United States and are likely to be impacted by the final rule. Assuming the final rule is issued by April 2014, MidAmerican’s affected generating facilities will be required to complete impingement and entrainment studies in 2015. However, the costs of compliance with the cooling water intake structure rule cannot be determined until the rule is final and the prescribed studies are conducted.

C. Effluent Limit Guidelines

In 2009, the Environmental Protection Agency announced its intention to undertake effluent rulemaking based, in part, on the concern that installation of controls to reduce emissions has the potential to change the wastewater streams that the current regulations, which were last updated in 1982, do not adequately address the pollutants being discharged and have not kept pace with changes that have occurred over the last three decades. MidAmerican received and responded to the Environmental Protection Agency’s effluent limitation guideline questionnaire information collection request in September 2010 and the company has periodically responded to additional follow-up inquiries from the Environmental Protection Agency since that time.

In June 2013, the Environmental Protection Agency proposed a new rule to modify effluent limits for wastewater discharges from steam electric plants. The proposed rule included eight regulatory alternatives addressing seven different wastestreams to varying degrees. The agency identified four of these alternatives as preferred alternatives. The Environmental Protection Agency is under a settlement agreement with the environmental groups to finalize updated effluent limits by May 22, 2014. However, on March 18, 2014, the EPA indicated that it will not be able to meet the May 22 deadline and is currently negotiating an extension with the litigants. Until the rule is finalized and depending on the alternative selected, MidAmerican cannot determine the costs of compliance with the effluent limits.