time, thus reducing the need for replacement power, minimizing costs, and maintaining system reliability.

Pollution control projects are extremely complex and require a significant amount of evaluation and planning to bring to fruition. Moreover, state environmental agency permitting processes are required to define the technical requirements needed in order to seek competitive bidding and pricing for the work and ultimately executing the projects. The timeline for securing contracts for this type of work through project completion often has a multi-year duration.

IV. Managing Project Execution and Compliance Risk

The full and final scope of environmental regulations is not easily determined, particularly when rulemakings are often lengthy in their own right and just as often followed by extensive and lengthy litigation before the rule is finalized. Perfect foresight is not possible; the EPA has recently begun to acknowledge that its approach to regulation makes it difficult for companies with compliance obligations to make long-term decisions on compliance. In EPA Administrator Lisa Jackson's remarks prepared on the release of the HAPS MACT standards on March 16, 2011, she stated:

> The proposal and implementation of these standards will also have benefits for American utilities. For the first time in twenty years, they will have certainty about the standards they must meet. And setting national standards for mercury and air toxics will level the competitive playing field and close loopholes for big polluters. Utilities that have already put pollution control technology in place will no longer have to compete with those who have delayed those investments – a group that includes almost half of the nation's coal-fired plants, which lack advanced pollution control equipment. In fact, facilities that have already taken responsible steps to reduce the release of toxins into our air will be at a competitive advantage over their heavy-polluting counterparts. And to ensure cost-effectiveness, we have proposed flexibility in meeting the standards. The technologies being required already exist in abundance, and under the proposal, power providers have four years to comply.[2]

MidAmerican believes it would be imprudent to wait until all the regulations are considered, finalized, and quantified to install controls. Doing so would put the facilities at substantial risk of noncompliance and does not reflect the reality of the multistate operations and planning process for large utilities. Moreover, it would be imprudent to assume a large utility can install all required controls under a "just-in-time" plan. This approach to compliance poses a significant risk to MidAmerican and our stakeholders; as a practical matter, it cannot be economically achieved on a system the size of MidAmerican's utility platforms. Emission reduction projects are complex, multi-year projects. Trying to install multiple controls within the same short time frames poses a significant risk of noncompliance, with penalties that can be substantial. Even if a regulatory agency did not impose penalties for failing to achieve emission reduction deadlines,

[2] Remarks available at:
http://yosemite.epa.gov/opa/admpress.nsf/12a744ff56dbff8585257590004750b6/b7e570d651cadc03852578550057011c!OpenDocument

third parties have not hesitated to bring lawsuits against the operators of those facilities that miss deadlines or are otherwise not in compliance with permit and emission limits. Indeed, the federal Clean Air Act specifically allows for private citizen enforcement of air quality requirements.

V. Other Factors to Consider

Finally, environmental regulations and the cost of implementation are only one factor that influences whether or not to make investments in environmental projects; MidAmerican also must consider the cost of alternative generation, such as small modular nuclear reactors. Future natural gas prices, construction costs for renewable generation, and associated transmission availability and costs are also among the factors we evaluate in determining whether it is economic to install controls at coal-fueled plants.

VI. The Role of State Regulators and Stakeholder Feedback

Our state regulators are the consumers' watchdogs, and they apply standards to ensure that only those costs that are prudently incurred and useful in providing service are recovered in rates. This structure does not encourage utilities to become early movers or emission control technology developers. Those responsibilities lie with the vendor community, where the market provides greater potential rewards for successful innovation. Shareholders of these unregulated companies, not utility customers, earn the rewards of success or bear the costs of failure.

Neither utilities nor regulators have perfect foresight regarding the development of future technologies, future market conditions, or changes in environmental laws, but we make the best projections possible in our resource development decisions. We also appreciate that the American public is concerned with environmental issues, including global climate change. The significant concern for electric utilities is carbon dioxide, the byproduct of the combustion of fossil fuels. Although the primary focus has been on coal-based generation, since it produces more carbon dioxide per unit of electric energy than other fossil fuels, natural gas-fired generation also produces carbon dioxide emissions and is at risk as a continuing source of fuel due to uncertainties around climate change and carbon dioxide regulations.

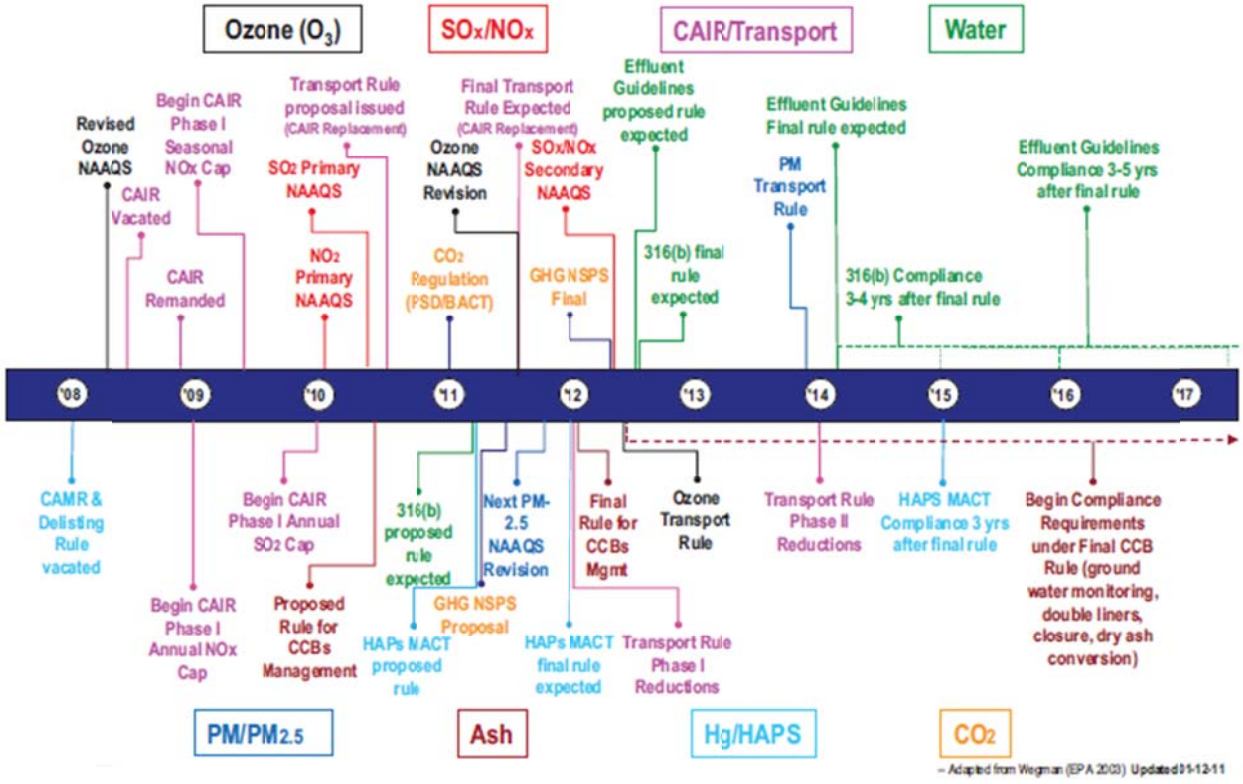
There are many different viewpoints regarding whether MidAmerican should make investments in our existing coal-fueled facilities. Our challenge is to work with these stakeholders and our regulators to come up with solutions that balance state and federal policies, ensure system reliability, maintain 100% compliance with all laws, keep the lights on, meet increasing customer loads, ensure the safety of our employees and customers, and satisfy the obligation to serve, all while maintaining reasonable rates.

SECTION II

The So-Called "EPA Regulatory Train Wreck"

Both MidAmerican Energy Company and PacifiCorp continue to pursue proactive environmental control strategies that are protective of the environment while minimizing cost impacts to our customers. There are a multitude of environmental requirements the electric industry faces over the next several years driving these investments. Figure 1 provides a timeline, referenced colloquially as the so-called "EPA regulatory train wreck" slide. It identifies some of the requirements that are currently underway or in development. There is a great deal of uncertainty associated with future environmental requirements; however, MidAmerican must comply with the requirements that exist today and prepare for the regulations that will be adopted in the future.

Figure 1 - EPA's "Regulatory Train Wreck"



The areas of regulation listed below reflect the color-coded "categories" of regulations identified within Figure 1.

1. **PM/PM2.5**
2. **Ozone (O_3)**
3. **SOx/NOx**
4. **CAIR/Transport Rule**

These first four categories are grouped together because under the Clean Air Act each of these categories is linked to one or more National Ambient Air Quality Standards ("NAAQS"). These "criteria pollutants" – particulate matter ("PM"), sulfur dioxide ("SO_2"), ozone ("O_3"), nitrogen oxides ("NOx"), carbon monoxide ("CO"), and hydrocarbons – while undesirable, are not toxic in typical concentrations in the ambient air. Under the Clean Air Act, they are regulated differently from other types of emissions, such as hazardous air pollutants and greenhouse gases.

A NAAQS by itself does not require emissions reductions from specific sources, such as power plants. Rather, the EPA and/or a state will identify various control measures that once implemented, are meant to achieve the NAAQS. A particular control measure may require emissions reductions from certain types of sources. An example of such a control measure would be the EPA's proposed Clean Air Transport Rule, discussed further below.

The Clean Air Act, which was last amended in 1990, requires the EPA to set NAAQS (40 CFR part 50) for pollutants considered harmful to public health and the environment. The Clean Air Act established two types of national air quality standards. ***Primary standards*** set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. ***Secondary standards*** set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings. The Clean Air Act requires the EPA to review the latest scientific information and standards every five years. Before new standards are established, policy decisions undergo rigorous review by the scientific community, industry, public interest groups, the general public and the Clean Air Scientific Advisory Committee (CASAC).

Particulate Matter (PM) and Fine Particulates ($PM_{2.5}$): The Clean Air Act established NAAQS for particle pollution (i.e., particulate matter or "PM"). The EPA last revised the air quality standards for particle pollution in 2006. The next review is expected in 2011.

Ozone (O_3): Ozone is a gas composed of three oxygen atoms. It is not usually emitted directly into the air, but at ground-level is created by a chemical reaction between NOx and volatile organic compounds ("VOC") in the presence of sunlight. EPA last revised the NAAQS for ozone pollution in 2008 (at 75 micrograms per cubic meter), putting some counties into non-attainment and requiring states to take steps to reduce emissions to improve the ambient air concentrations. However, EPA is now reconsidering its 2008 decision and may lower the limit (to between 60 and 70 micrograms). EPA expects to make its decision by the end of July 2011.

Sulfur Dioxide (SO_2) and Nitrogen Oxide (NOx): In 2010, the EPA promulgated new "primary" one-hour NAAQS for SO_2 and nitrogen dioxide ("NO_2") concentrations, which add a temporal nature to emissions reductions necessary to improve the ambient air concentrations. New "secondary" SO_2 and NOx NAAQS are expected in 2012.

Clean Air Transport Rule ("CATR"): EPA's proposed CATR would require new reductions in SO_2 and NOx emissions from large stationary sources, including power plants, located in 31 states and the District of Columbia beginning in 2012. It is meant to help states attain NAAQS set in 1997 for ozone and fine particulate matter. This rule would replace the Bush

administration's CAIR, which was vacated in July 2008 and rescinded by a federal court because it failed to effectively address pollution from upwind states that is hampering efforts by downwind states to comply with ozone and PM NAAQS.

The EPA has been discussing the possibility of additional emissions reductions via a "PM Transport" rule (2013) or a "Transport II" rule (2014). Justification for such a rule or set of rules would be triggered by the setting of more stringent ozone or PM NAAQS. For example, a more stringent ozone NAAQS may result in an expansion of NOx emissions reduction requirements to stationary sources operating in the non-CATR states.

MidAmerican's Compliance Strategy: The Clean Air Transport Rule only impacts MidAmerican Energy Company's coal units in Iowa and CalEnergy's natural gas facilities in Texas, Illinois and New York. MidAmerican Energy Company has already completed a low NOx burner and overfire air program across its entire coal-fueled fleet. As a result, NOx emissions have dropped from approximately 40,000 tons per year to slightly over 20,000 tons per year – or nearly 50%. In addition, dry scrubbers have been installed at its Louisa and Walter Scott Energy Center unit 4 in 2007, and Walter Scott Energy Center unit 3 in 2009. Additional scrubber projects are being planned for Neal South in 2013, and Neal North units 2-3 and the Ottumwa Generating Station in 2014. Once these projects are complete, MidAmerican Energy Company's SO_2 emissions will be reduced from a baseline of over 60,000 tons per year to slightly less than 25,000 tons per year – or nearly 60%.

The EPA intends for this Rule to evolve as additional changes are made to the National Ambient Air Quality Standards for SO_2 and NOx. This could lead to significant stranded investments and cause the affected states to also expand to the western coast; if modeling shows those states ultimately contributing to a downwind attainment problem.

Regional Haze Rule: While not depicted within the EPA regulatory train wreck slide, an EPA rule meant to address visibility concerns will drive additional NOx reductions particularly from facilities operating in the Western United States. On June 15, 2005, EPA issued final amendments to its July 1999 regional haze rule. These amendments apply to the provisions of the regional haze rule that require emission controls known as Best Available Retrofit Technology ("BART"), for industrial facilities emitting air pollutants that reduce visibility. These pollutants include $PM_{2.5}$, and compounds which contribute to $PM_{2.5}$ formation, such as NOx, SO_2, certain volatile organic compounds, and ammonia. The 2005 amendments included final guidelines, known as BART guidelines, for states to use in determining which facilities must install controls and the type of controls the facilities must use. States had until December 2007 to develop their implementation plans. States were responsible for identifying the facilities that would have to reduce emissions under BART and then set BART emissions limits for those facilities. Those facilities are expected to install additional emissions controls usually within five years after the EPA approves a state's regional haze plan (2014-2017).

MidAmerican's Compliance Strategy: PacifiCorp operates 19 coal-fueled generating units; 14 of these units are BART or BART-eligible units. Between 1999 and 2014, PacifiCorp will have installed low-NOx burners at 15 units, reducing NOx emissions by 36,800 tons per year. The capital cost of these projects is $125 million; annual operating and maintenance expenses

associated with the equipment are $1.6 million. Beginning in 2014, PacifiCorp will install selective catalytic reduction ("SCR") to achieve additional NOx emission reductions. Between 2014 and 2022, five units will have SCR installed, reducing NOx emissions by 21,000 tons at a cost of $951 million; operating and maintenance costs will increase by $25.8 million annually.

Unfortunately, recent discussions with the Utah and Wyoming Departments of Environmental Quality suggest that EPA Region 8 believes it may be necessary, for purposes of Regional Haze BART requirements, to install another five SCR in Wyoming and four SCR in Utah, combined with the five planned installations, within a five-year time period—potentially requiring 14 SCR by 2017 and an additional $1.7 billion to $2 billion in costs. PacifiCorp maintains its outage schedule on a four-year cycle; major projects such as the addition of emission control require a significant outage. Installing controls during times outside of the normal outage schedule creates significant electric reliability and availability concerns and imposes significant additional costs for replacement power. The costs of controls, replacement power, and other project-related costs are reflected in increased costs to customers.

The Regional Haze program does not require that emission reductions occur on a date certain; to the contrary, the Regional Haze program is a long-term program designed to improve visibility in Class I areas with the national goal of achieving natural visibility conditions by 2064. States are required to establish reasonable progress goals to achieve the required visibility improvements. States are required, under Section 169A(b) of the Clean Air Act to consider the following when making their BART determinations:

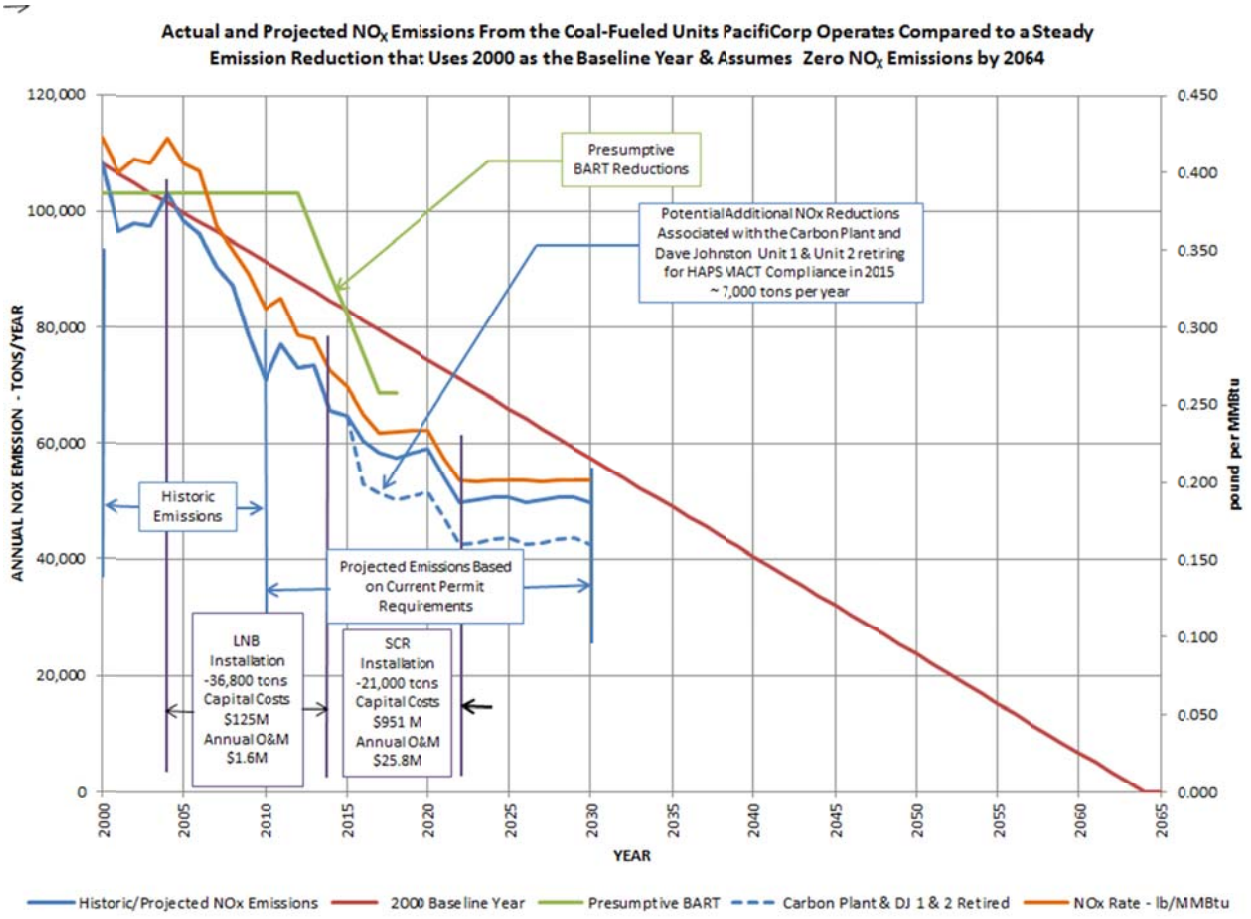
- The costs of compliance;
- The energy and non-air quality environmental impacts of compliance;
- Any existing pollution control technology in use at the source;
- The remaining useful life of the source; and
- The degree of visibility improvement which may reasonably be anticipated from the use of BART.

In considering whether the states' implementation plans are sufficient for approval, EPA appears to be focused, at best, on two criteria – the costs of compliance and the degree of visibility improvement. Effectively, EPA has indicated that any emission reductions that can be accomplished for $5,000 or less per ton at facilities that have more than a 0.50 deciview impact on a Class I area should be controlled. EPA's analysis fails to take into consideration the more robust criteria considered by the states in making their determinations, opting for more reductions sooner.

As a result of EPA's failure to take into consideration factors such as existing pollution control technology in use at the source, its cost per ton of emissions reduced is inaccurate. For example, at PacifiCorp's Jim Bridger Unit 1, low-NOx burners were installed in 2010. Rather than calculating the incremental costs associated with installation of SCR from the reduced baseline that reflects the emission reductions from low-NOx burners, EPA spreads the cost of both low-NOx burners and SCR to achieve a cost per ton removed more than $2,000 per ton lower than the incremental difference between low-NOx burners and SCR.

EPA's suggestions that it will require more emission controls in a shorter period of time is akin to jumping off a cliff, rather than achieving emission reductions in a reasonable period of time through 2064. (See Figure 2.)

Figure 2 – PacifiCorp's Regional Haze/BART Compliance Strategy



5. Hg/HAPS

In March 2005, EPA issued the Clean Air Mercury Rule ("CAMR") to permanently limit and reduce mercury emissions from coal-fired power plants under a market-based cap-and-trade program; this rule would effectively remove coal-fired power plants from the Clean Air Act list of sources of hazardous air pollutants. However, CAMR was vacated in February 2008, with the circuit court finding EPA's removal of coal-fired power plants from the list of generating sources regulated under Clean Air Act Section 112 out of statutory compliance.

On March 16, 2011, the EPA signed the proposed Utility Hazardous Air Pollutants ("HAPS") Maximum Achievable Control Technology ("MACT") rule, which sets standards for 10 non-mercury HAPS metals, mercury and acid gases. It also establishes work practices to ensure the minimization of organic HAPS such as furans and dioxins emitted by coal and oil-fueled electric generating units. The rule is standard-drive, not technology-driven and, as such, there are

multiple pathways to comply with the rule; however, it appears the EPA is encouraging utilities to: install baghouses with particulate matter continuous emission monitors for non-mercury metallic HAPS control, install sulfur dioxide scrubbers to control acid gases, and install activated carbon/reagent injection to remove mercury.

MidAmerican's Compliance Strategy: In order to meet emissions projections, MidAmerican Energy Company must complete scrubber projects planned for Neal 4 in 2013, and Neal units 2 and 3 and Ottumwa Generating Station in 2014 and add sorbent injection to Neal 1, Walter Scott Energy Center unit 1, Walter Scott Energy Center unit 2, and Riverside Generating Station. Walter Scott Energy Center unit 4 already employs an activated carbon injection system to control mercury and the remaining units with existing or planned baghouses are expected to install activated carbon injection by fall 2014. The cost of most of these projects is approximately $485 million (MidAmerican Energy Company's share). Additional activated carbon injection and sorbent injection projects at the four small coal-fueled units would require an estimated $30 million (MidAmerican Energy Company's share).

MidAmerican Energy Company's smaller coal-fueled units (Walter Scott Energy Center 1, Walter Scott Energy Center 2, Neal 1, and Riverside) may not be able to comply with the proposed HAPS MACT rule without making significant investments in control technology (unless the units are converted exclusively to fire natural gas).

For PacifiCorp, in order to meet the emission reductions anticipated by the new regulations, PacifiCorp must complete scrubber, baghouse, and mercury emissions controls projects no later than fall of 2014 in order to comply with the anticipated January 1, 2015 implementation date at a cost of approximately $1.26 billion (PacifiCorp's share). This capital cost includes installation of mercury control at all PacifiCorp units, including Carbon Unit 1 and 2 and Dave Johnston Unit 1 and Unit 2 at an estimated $12 million (PacifiCorp's share).

The units most at risk from the new HAPS MACT regulations are unscrubbed units that do not have baghouses. These units (Carbon Units 1 and 2 and Dave Johnston Units 1 and 2) may need to be idled or converted to natural gas (assuming it is available onsite) if the non-mercury metallic HAPS and acid gas HAPS limits cannot be met through dry sorbent injection, or other emergent low-cost technology solutions.

Due to the non-emission-trading nature of the proposed rule, units not meeting the unit-based HAPS MACT emission standards would be required to cease operation on or about January 1, 2015, should that date become the compliance deadline. Some of those facilities are also located in key transmission grid areas that provide voltage support that cannot be addressed by the fall of 2014 in order to comply with the anticipated January 1, 2015 implementation date. As such, we urge EPA to carefully consider potential options to develop a mechanism that avoids significant impacts to the availability, reliability and cost of electricity while balancing the need to reduce emissions.

6. Water

Cooling Water Intake Structure Rule: EPA recently released it proposed cooling water intake structure ("CWIS") rule pursuant to Clean Water Act (CWA) section 316(b) for existing steam-electric power plants. In November 2010, EPA entered into a settlement agreement with the environmental community that sets a binding timetable for a proposed rule by March 2011 and a final rule by July 2012.

MidAmerican's Compliance Strategy: All of MidAmerican Energy's coal-fueled generating facilities, except Louisa, Ottumwa and Walter Scott Unit 4, which have water cooling towers, are regulated facilities under 316(b) of the Clean Water Act and may be impacted by the outcome of the expected rulemaking. Neal 1-4, Walter Scott Energy Center 1-3, and Riverside Generating Station have once through cooling on the Missouri and Mississippi Rivers. At PacifiCorp, only the Dave Johnston plant withdraws enough cooling water to be covered by the 316(b) rule. Every other PacifiCorp facility that is potentially affected by this rule has a recirculating cooling system in place thereby meeting the likely technology requirements of the rule.

Steam Electric Effluent Guidelines: EPA announced in September 2009 that it intends to revise the existing steam electric guidelines, last updated in 1982, that set the technology-based effluent limitations for the steam electric industry. The new effluent guidelines rulemaking is likely to set strict performance standards that will force technological and operational changes at existing coal-fueled, nuclear, gas-fueled, and combined cycle facilities. The most significant impact, however, will likely be to coal-fueled facilities. The proposed rule is due in July 2012 with a final rule expected in January 2014.

MidAmerican's Compliance Strategy: MidAmerican Energy Company does not have any wet scrubbers installed in its coal-fueled fleet, and none are planned. The dry scrubbing process does not produce a significant waste water stream, as the approximate 600 gallons per minute of lime slurry water is evaporated in the process and emitted out the stack as vapor. MidAmerican, however, may face a greater challenge concerning the discharge of process water from its coal ash surface impoundments.

PacifiCorp has a number of wet scrubbers in its coal-fueled fleet which produce waste water streams. In most cases, water from these waste streams is collected and evaporated in waste water ponds. The wet scrubbers are currently installed at Hunter 1-3, Huntington 1-2, Naughton 3, Bridger 1-4, Cholla 4, Craig 1-2, and Colstrip 3-4. New wet scrubbers are planned to be placed in service at Naughton 1-2 in 2012 and 2011, respectively. In addition, the PacifiCorp coal-fueled facilities have a number of coal ash surface impoundments.

Unfortunately, there is no definitive method to ascertain the potential financial impacts of new effluent guidelines on the MidAmerican and PacifiCorp coal-fueled fleets until the actual rule requirements are proposed in mid-2012; and there are no projects budgeted to specifically address these issues. However, as the effluent discharge requirements become more and more stringent, the facilities which have discharges to waterways will likely be required to either add wastewater treatment facilities or redesign their process if possible to be a zero discharge facility. The costs to comply with such a rule are expected to be high. Wastewater treatment systems

generally range from tens of millions of dollars for a small facility, to a hundred million or more for a large facility.

7. Ash

In June 2010, EPA proposed two primary regulatory options for coal combustion residuals ("CCR") disposed of in landfills and/or surface impoundments: (1) regulation of the materials as hazardous wastes under Subtitle C of the Resource Conservation and Recovery Act ("RCRA"); or (2) regulation of the materials as non-hazardous wastes under Subtitle D of RCRA. Under both options, the proposed regulatory requirements likely would lead to the accelerated closure of all existing unlined landfills and unlined wet surface impoundments, although the agency's "D Prime" option would allow for the continued use of existing landfills and surface impoundments through their useful life as long as certain environmental and safety standards were met. Under each option, CCRs that are beneficially used would be excluded from regulation; however, the stigma associated with a hazardous waste determination would have a devastating impact on continued beneficial uses. Under the two primary options under consideration by EPA, CCR disposal practices will be impacted significantly and result in significant compliance costs, may lead to the closure of existing disposal facilities, and may threaten continued CCR beneficial use.

MidAmerican's Compliance Strategy: The regulation of CCR under either of the EPA's primary options would have a significant impact on the methods that MidAmerican Energy Company typically employs to manage its ash. With the exception of Walter Scott Unit 4 and Neal Unit 4 which handle all the coal ash dry, all of MidAmerican Energy Company's coal-fueled units sluice the boiler bottom ash to on-site surface impoundments. In addition, if CCR is ultimately designated as a hazardous waste, the beneficial use market could evaporate and eliminate the over $3 million MidAmerican Energy Company receives each year for this commodity. The loss of the beneficial use market would also increase disposal costs and dramatically increase the rate at which the monofills are filled.

Similar to MidAmerican Energy Company, the regulation of CCR under either of the EPA's primary options would have a significant impact on the methods that PacifiCorp typically employs to manage its ash. Currently, Carbon, Hunter, and Huntington do not have any wet surface impoundments at the facilities. The remaining coal-fueled units, however, sluice ash and scrubber waste to on-site surface impoundments. In addition, if CCR is ultimately designated as a hazardous waste, the beneficial use market could evaporate and eliminate the over $3.5 million PacifiCorp receives each year on average from this commodity. The loss of the beneficial use market would also increase disposal costs and dramatically increase the rate at which monofills are filled.

8. CO_2

Best Available Control Technology ("BACT") Guidelines: On November 10, 2010, the EPA published a set of guidance documents to assist state permitting authorities and industry permitting applicants with the Clean Air Act PSD and title V permitting for sources of greenhouse gases ("GHGs"). The guidance consists of a number of different documents. EPA provided a general guidance document entitled "PSD and Title V Permitting Guidance For

Greenhouse Gases," which includes a set of appendices with illustrative examples of BACT determinations for different types of facilities. There also remains ongoing concern about the application of New Source Review ("NSR") rules to GHGs. It is unclear whether owners of fossil power plants should proactively undertake efficiency improvements, lest those efficiency improvements be treated as a modification that triggers the application of NSR rules.

MidAmerican's Compliance Strategy: With respect to the GHG BACT permitting, PacifiCorp recently completed permitting for its Utah Lake Side 2 natural gas combined-cycle power plant, where the additional resources and costs required to complete the permitting effort were estimated to be between $25,000 and $50,000 for GHG-related modeling costs, consultant costs, and internal labor.

MidAmerican Energy Company recently completed its GHG BACT permitting for its George Neal South emission control project located in Iowa, but the additional work was completed internally. However, to comply with the newly proposed GHG limit, MidAmerican Energy Company demonstrated that replacing the existing turbine with a more efficient design is technically feasible and would cost approximately $20 million. We also have to test several boiler injection chemicals to determine if they improve plant efficiency. If it is determined that the chemicals are technically and economically feasible, the unit will be required to utilize them going forward.

It should also be noted, that despite claims to the contrary, there are no post-combustion technologies commercially available to control greenhouse gas emissions. Carbon capture and sequestration is likely at least 5-10 years away from becoming commercially available, and only if certain technical, legal, and liability challenges can be overcome. Additionally, the use of biomass is generally limited to certain boiler types for potential retrofit, and only a small percentage can replace the primary boiler fuel. As a result, facilities undergoing GHG BACT permitting are only left with potential efficiency upgrades / heat rate improvement projects to pursue. Since these types of projects typically result in relatively small improvements in efficiency (i.e. less than 1%-3%), an aggressive GHG BACT permit limit may not be achievable on existing units.

New Source Performance Standards: On December 23, 2010, in a settlement reached with several states and environmental groups in *New York v. EPA*, the EPA agreed to promulgate emissions standards covering GHGs from both new and existing electric generating units under Section 111 of the Clean Air Act by July 26, 2011 and issue final regulations by May 26, 2012.[3] New source performance standards are established under the Clean Air Act for certain industrial sources of emissions determined to endanger public health and welfare and must be reviewed every eight years. New source performance standards apply to new and modified sources and effectively establish the floor for determining what constitutes BACT.

In addition, emission guidelines will apply to existing sources. The emissions guidelines, issued by EPA, are used by states to develop plans for reducing emissions and include targets based on demonstrated controls, emission reductions, costs and expected time frames for installation and

[3] EPA also entered into a similar settlement the same day to address greenhouse gas emissions from refineries with proposed regulations by December 15, 2011 and final regulations by November 15, 2012.

compliance and may be less stringent than the requirements imposed on new sources. States must submit their plans to EPA within nine months after the guidelines' publication unless EPA sets a different schedule. States have the ability to apply less stringent standards or longer compliance schedules if they demonstrate that following the federal guidelines is unreasonably cost-prohibitive, physically impossible, or that there are other factors that reasonably preclude meeting the guidelines. States may also impose more stringent standards or shorter compliance schedules. Lastly, under Section 111, EPA may establish standards that rely upon market mechanisms rather than technology-specific emissions rates.

MidAmerican's Compliance Strategy: It is unclear what approach EPA will take when establishing new source performance standards covering GHGs from both new and existing electric generating units or what the guidelines will be for existing sources. The proposed settlement agreement indicates that EPA's initial evaluation of available GHG control strategies indicates that there are cost-effective control strategies for reducing GHGs from electric generating units and that it would be appropriate for EPA to concurrently propose performance standards from new and modified electric generating units, and emissions guidelines for GHG emissions from existing affected electric generating units. As noted above (p. 15), MidAmerican disagrees that there are cost-effective post-combustion control strategies for reducing greenhouse gas emissions, and only limited efficiency improvements are commercially available at this time. EPA indicated that the GHG standards are likely to apply to existing facilities starting in 2015 or 2016.

Figure 3 - Overview of MidAmerican's Environmental Control Projects

				NOx Emission Controls					SO_2 Emission Controls		Particulate Controls			Mercury (Hg) Control	CCB Compliance		
Unit	Year Installed	Regulatory Depreciation Life (non-OR)	Accredited Net MW Rating (100% Share)	Neural Network System	Low NOx Burners	Overfire Air	Selective Non-Catalytic Reduction	Selective Catalytic Reduction	Dry Scrubber	Wet Scrubber	Electrostatic Precipitator	Wet Scrubber	Baghouse	Activated Carbon Injection	(Dates shown are initial compliance projects in-service) Pond closure, wet-to-dry conversion, new facilities	Potential to Operate on Full Load Natural Gas	MEC/PAC Ownership
Neal 1	1964		135	Y	N/A	Y	Not Planned	Not Planned	Not Planned	Not Planned	Y - Hot	N/A	Not Planned	2014	2015	Y	100.00%
Neal 2	1972		295	Y	Y	Y	2014	Not Planned	2014	Not Planned	Y - Cold	N/A	2014	2014	2015	N/A	100.00%
Neal 3	1975		515	Y	Y	Y	2014	Not Planned	2014	N/A	Y - Cold	N/A	2014	2014	2015	N/A	72.00%
Neal 4	1979		644	Y	Y	Y	2013	Not Planned	2013	N/A	Y - Cold	N/A	2013	2014	Not Planned	N/A	40.57%
WSEC 1	1954		45	Not Planned	Y	Not Planned	Not Planned	Not Planned	Not Planned	Not Planned	Y - Hot	N/A	Not Planned	2014	2015	N/A	100.00%
WSEC 2	1958		88	Not Planned	Y	Y	Not Planned	Not Planned	Not Planned	Not Planned	Y - Hot	N/A	Not Planned	2014	2015	Y	100.00%
WSEC 3	1978		690	Y	Y	Y	Not Planned	Not Planned	Y	N/A	Y - Cold	N/A	Y	2014	2015	N/A	79.10%
WSEC 4	2007		800	Y	Y	Y	Not Planned	Y	Y	N/A	N/A	N/A	Y	Y	Not Planned	N/A	59.66%
Louisa	1983		745	Y	Y	Y	Not Planned	Not Planned	Y	N/A	Y - Hot	N/A	Y	2014	2014	N/A	88.00%
Riverside	1925/1961		130	Y	Y	Y	Not Planned	Not Planned	Not Planned	Not Planned	Y - Cold	N/A	Not Planned	2014	2015	Y	100.00%
Ottumwa	1981		710	Y	Y	Y	Not Planned	Not Planned	2014	N/A	Y - Hot	N/A	2014	2014	Not Planned	N/A	52.00%
Carbon 1	1954	2020	67	Not Planned	Not Planned	Not Planned	Not Planned	Not Planned	Not Planned	Not Planned	Y - Cold Side	-	Not Planned	Sorb Inj + Oxidizer	2015	Under Review	100.00%
Carbon 2	1957	2020	105	Not Planned	Not Planned	Not Planned	Not Planned	Not Planned	Not Planned	Not Planned	Y - Cold Side	-	Not Planned	Sorb Inj + Oxidizer	2015	Under Review	100.00%
Cholla 4	1981	2042	395	Not Planned	Y	Y	Not Planned	Not Planned	N/A	Y	N/A	-	Y	Coal Oxidizer	2015	Not Planned	100.00%
Colstrip 3	1984	2046	740	Not Planned	Y	Y	Not Planned	Not Planned	N/A	Y	N/A	Y	N/A	Y - Installed	2015	Not Planned	100.00%
Colstrip 4	1986	2046	740	Not Planned	Y	Y	Not Planned	Not Planned	N/A	Y	N/A	Y	N/A	Y - Installed	2015	Not Planned	100.00%
Craig 1	1980	2034	428	Not Planned	Y	Y	2014	Not Planned	N/A	Y	N/A	-	Y	Coal Oxidizer	2015	Not Planned	19.28%
Craig 2	1979	2034	428	Not Planned	Y	Y	2013	Not Planned	N/A	Y	N/A	-	Y	Coal Oxidizer	2015	Not Planned	19.28%
Dave Johnston 1	1958	2027	106	Not Planned	N	N	Not Planned	Not Planned	Not Planned	Not Planned	Y - Cold Side	-	Not Planned	Sorbent Injection	2015	Under Review	100.00%
Dave Johnston 2	1960	2027	106	Not Planned	N	N	Not Planned	Not Planned	Not Planned	Not Planned	Y - Cold Side	-	Not Planned	Sorbent Injection	2015	Under Review	100.00%
Dave Johnston 3	1964	2027	220	Not Planned	Y	Y	Not Planned	Not Planned	Y	N/A	Y - Cold Side	-	Y	Sorbent Injection	2015	Not Planned	100.00%
Dave Johnston 4	1972	2027	330	Not Planned	Y	Y	Not Planned	Not Planned	2012	N/A	Y - Cold Side	-	2012	Sorbent Injection	2015	Not Planned	100.00%
Hayden 1	1965	2030	184	Not Planned	Y	Y	Not Planned	2015	Y	N/A	N/A	-	Y	Sorbent Injection	2015	Not Planned	24.46%
Hayden 2	1976	2030	262	Not Planned	Y	Y	Not Planned	2016	Y	N/A	N/A	-	Y	Sorbent Injection	2015	Not Planned	12.60%
Hunter 1	1978	2042	430	Not Planned	2014	2014	Not Planned	Not Planned	N/A	Y	Y - Cold Side	-	2014	Coal Oxidizer	2015	Not Planned	93.75%
Hunter 2	1980	2042	430	Not Planned	2011	2011	Not Planned	2023	N/A	Y	Y - Cold Side	-	2011	Coal Oxidizer	2015	Not Planned	60.31%
Hunter 3	1983	2042	460	Not Planned	Y	Y	Not Planned	2024	N/A	Y	N/A	-	Y	Coal Oxidizer	2015	Not Planned	100.00%
Huntington 1	1977	2036	445	Not Planned	Y	Y	Not Planned	2023	N/A	Y	Y - Cold Side	-	Y	Coal Oxidizer	2015	Not Planned	100.00%
Huntington 2	1974	2036	450	Not Planned	Y	Y	Not Planned	Not Planned	N/A	Y	N/A	-	Y	Coal Oxidizer	2015	Not Planned	100.00%
Jim Bridger 1	1974	2037	530	Not Planned	Y	Y	Not Planned	2022	N/A	Y	Y - Cold Side	-	Not Planned	Sorb Inj + Oxidizer	2015	Not Planned	66.67%
Jim Bridger 2	1975	2037	527	Not Planned	Y	Y	Not Planned	2021	N/A	Y	Y - Cold Side	-	Not Planned	Sorb Inj + Oxidizer	2015	Not Planned	66.67%
Jim Bridger 3	1976	2037	530	Not Planned	Y	Y	Not Planned	2015	N/A	Y	Y - Cold Side	-	Not Planned	Sorb Inj + Oxidizer	2015	Not Planned	66.67%
Jim Bridger 4	1979	2037	530	Not Planned	Y	Y	Not Planned	2016	N/A	Y	Y - Cold Side	-	Not Planned	Sorb Inj + Oxidizer	2015	Not Planned	66.67%
Naughton 1	1963	2029	160	Not Planned	2012	2012	Not Planned	Not Planned	N/A	2012	Y - Cold Side	-	Not Planned	Sorb Inj + Oxidizer	2015	Not Planned	100.00%
Naughton 2	1968	2029	210	Not Planned	2011	2011	Not Planned	Not Planned	N/A	2011	Y - Cold Side	-	Not Planned	Sorb Inj + Oxidizer	2015	Not Planned	100.00%
Naughton 3	1971	2029	330	Not Planned	Y	Y	Not Planned	2014	N/A	Y	Y - Cold Side	-	2014	Sorb Inj + Oxidizer	2015	Not Planned	100.00%
Wyodak	1978	2039	335	Not Planned	2011	2011	Not Planned	Not Planned	Y	N/A	Y - Cold Side	-	2011	Sorbent Injection	2015	Not Planned	80.00%