

Rocky Mountain Power  
Docket No. 10-035-124  
Witness: Cathy S. Woollums

BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF UTAH

ROCKY MOUNTAIN POWER

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Rebuttal Testimony of Cathy S. Woollums

Environmental Controls Investments

June 2011

1 **Introduction**

2 **Q. Please state your name and business address and position.**

3 A. My name is Cathy S. Woollums. My business address is 106 East Second Street,  
4 Davenport, Iowa. My position is senior vice president of environmental services  
5 and chief environmental counsel for MidAmerican Energy Holdings Company  
6 (MEHC). PacifiCorp is a subsidiary of MEHC.

7 **Qualifications**

8 **Q. Please describe your education and business experience.**

9 A. I received a Bachelor of Arts Degree in Political Science from Winona State  
10 University and a Juris Doctorate from Drake University Law School. I was  
11 admitted by examination to practice law in Iowa and Illinois and maintain my  
12 licensure in both states. Following law school, I served a one-year appointment as  
13 a law clerk in the 7<sup>th</sup> Judicial District in Iowa and then entered the private practice  
14 of law for approximately three years. I joined Iowa-Illinois Gas and Electric  
15 Company, a predecessor of MidAmerican Energy Company and MEHC, in 1991  
16 where I served in the capacity of an attorney within the general counsel's office  
17 and handled environmental matters, among others. I became the manager of  
18 environmental services in 1995 and have held increasing positions of  
19 responsibility for environmental issues within MEHC. In my current role as the  
20 senior vice president of environmental services, I have responsibility for the  
21 development and implementation of MEHC's worldwide corporate environmental  
22 policy, strategy and programs, including the development of comments on  
23 proposed state and federal laws and regulations, integrating environmental

24 assessments of existing and anticipated environmental regulations into planning  
25 and operating decisions of business units, and advising management of the impact  
26 of proposed regulations and developing potential compliance strategies. In  
27 addition, I oversee the organization's environmental compliance assurance  
28 management program, environmental permitting and reporting, and  
29 environmental litigation.

30 I have served on the Iowa State Bar Association's Environmental and  
31 Natural Resources Section Council, the Edison Electric Institute's Environment  
32 Executive Advisory Committee, the Iowa Climate Change Advisory Council, the  
33 Midwestern Governors' Association Power Sector Working Group, the  
34 Midwestern Governors' Renewable Electricity Advanced Coal with Carbon  
35 Capture Advisory Group, and The Climate Registry Advisory Committee. I was  
36 appointed to serve two terms as the Iowa governor's appointee to the Clean Air  
37 Act Compliance Advisory Panel, chaired the Iowa Association of Business and  
38 Industry's Environmental Committee for four years, and was recently invited to  
39 serve on the GHG Reporting and Mitigation Advisory Committee, a partnership  
40 of The Climate Registry and the Greenhouse Gas Management Institute.

41 **Purpose of Testimony**

42 **Q. What is the purpose of your rebuttal testimony in this proceeding?**

43 A. My testimony provides an overview of the national and associated state issues and  
44 drivers related to environmental investments that support the Company's  
45 decisions to invest in environmental controls at 6 generating stations at issue in  
46 this case. My testimony will address the following areas:

47 (1) The key regulatory and compliance drivers for the environmental controls;  
48 (2) The Company's approach to assessing future regulatory requirements and  
49 how those requirements may factor into its control selection decisions;  
50 and,  
51 (3) The overlap of the regional haze program with other air quality regulations  
52 and how the environmental controls installed under the regional haze  
53 program position the Company for future compliance with environmental  
54 requirements.

55 In doing so, my testimony will specifically respond to the direct testimony  
56 of Mr. Howard Gebhart and Mr. Kevin C. Higgins on behalf of Utah Association  
57 of Energy Users Intervention Group (UAE), Ms. Nancy Kelly on behalf of  
58 Western Resource Advocates (WRA), Dr. William Steinhurst, Ph. D. and Dr.  
59 Jeremy Fisher, Ph. D. on behalf of Sierra Club, Ms. Michele Beck on behalf of the  
60 Utah Office of Consumer Services (OCS), and Mr. Matthew Croft on behalf of  
61 the Utah Division of Public Utilities (DPU) regarding prudence of the Company's  
62 pollution control expenditures for coal-fired power generation plants. Company  
63 witness Mr. Chad A. Teply provides a summary of the concerns raised by these  
64 intervenors from the Company's perspective.

65 **Company Response to Concerns**

66 **Q. Does your testimony discuss the complexity in balancing stakeholder**  
67 **interests that the Company faces in making prudent pollution control capital**  
68 **investment decisions?**

69 **A.** Yes. As is apparent in the testimony filed by others in this docket, there are many

70 different viewpoints regarding whether the Company should make investments in  
71 its coal-fueled facilities. Some stakeholders take the position that it is imprudent  
72 to make environmental investments prior to the time they are absolutely required  
73 and some believe that the environmental regulations are too uncertain to make  
74 such investments at all. In contrast, others believe no controls should be installed  
75 because the units should be shut down due to environmental concerns. Therefore,  
76 opinion varies from demanding that no environmental controls are worth  
77 investing in at one end of the spectrum, to demands that the Company re-invent  
78 its entire fleet due to environmental concerns at the other end of the spectrum.  
79 Compliance with current environmental requirements is necessary to ensure the  
80 availability of a reliable source of electricity at a reasonable cost, now and into the  
81 future.

82 **Q. Please describe the process the Company engages in to determine whether to**  
83 **make investments in environmental controls.**

84 A. First and foremost in the decision to invest in cost-effective environmental  
85 controls are the Company's compliance obligations. If a permit or regulation  
86 requires the Company's plants to reduce emissions or achieve emission limits that  
87 cannot be met with existing equipment, compliance options are examined to  
88 ascertain what equipment can be installed to achieve the emission requirements.  
89 The Company also monitors state and federal rulemaking activities and legislative  
90 proposals that would have an impact on the facilities' operations. Monitoring  
91 these future requirements allows the Company to ensure it is taking a longer term  
92 view of the potential investments that may be required to lawfully continue

93 operation of the facilities.

94 **Q. What were the Company's compliance obligations that resulted in the**  
95 **installation of controls in this case?**

96 A. The Clean Air Act's Regional Haze requirements were the primary driver for the  
97 installation of the controls in this case. The Regional Haze program was originally  
98 established in 1999 as a long-term requirement to reduce visibility impairing  
99 emissions in Federal Class I areas by 2064. The timeline in Exhibit  
100 RMP\_\_\_(CSW-1R) reflects the general timing for states to implement the  
101 Regional Haze Rule after issuance of the first Regional Haze Rule in 1999. Many  
102 western states, including Utah and Wyoming, started their involvement in  
103 regional haze issues well in advance of 1999 through involvement in the Grand  
104 Canyon Visibility Transport Commission.

105 The Company has been engaged in Regional Haze Rule compliance  
106 planning with the respective state departments of environmental quality since the  
107 initial development of the western states' regional program. During the initial  
108 2003 to 2008 planning period, the Company was required by the Wyoming  
109 Division of Air Quality ("WDAQ") to conduct detailed Best Available Retrofit  
110 Technology ("BART") reviews. It was the initial expectation of the western  
111 states' regional haze program that individual states would establish BART  
112 emission limits for BART-eligible units and would require installation of  
113 appropriate controls by 2013. PacifiCorp originally submitted these evaluations of  
114 its BART-eligible facilities in Wyoming in January 2007, with revisions  
115 submitted in October 2007. Addenda to the individual facility BART reviews

116 were developed in March 2008. WDAQ completed its final reviews of the BART  
117 evaluations and the Company's associated permit applications and issued Air  
118 Quality Permits (construction permits) for the projects presented in this case in  
119 May 2009. WDAQ followed up by issuing BART permits for the pollution  
120 control projects presented in this case in December 2009. The pollution control  
121 projects presented in this case meet the Company's current BART obligations.

122 **Q. Please explain how the Company's SO<sub>2</sub> emission reduction projects included**  
123 **in this case fit into the Regional Haze Requirements.**

124 A. EPA gave the states the flexibility to select source-specific BART controls or to  
125 implement emissions reductions through what is referred to as a backstop trading  
126 program. While a greater number of states originally signaled their intention to  
127 implement the backstop trading program for SO<sub>2</sub>, only Utah, Wyoming and New  
128 Mexico have moved forward with development of that program through their  
129 state implementation plans. Effectively, the units subject to BART<sup>1</sup> in those three  
130 states are required to reduce emissions to achieve established milestone  
131 reductions; in order to obtain approval for the program, the milestone reductions  
132 "must be shown to provide for greater reasonable progress than would be  
133 achieved by application of BART" pursuant to 40 CFR §51.309(e)(2).<sup>2</sup> A state  
134 implementation plan submittal must include quantitative emissions milestones for  
135 stationary source SO<sub>2</sub> emissions for each year through 2018.

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<sup>1</sup> BART-eligible units are those constructed between 1962 and 1977; if a BART eligible unit causes or contributes to visibility impairment in a Federal Class I area, it may be considered to be subject to BART.

<sup>2</sup> See 40 CFR §51.309(d)(4)(i).

136 **Q. Do you agree with Mr. Gebhart that the Company's projects at issue were**  
137 **not necessary to meet the milestones?**

138 A. No. There are several reasons why Mr. Gebhart is incorrect in his conclusions.  
139 First, SO<sub>2</sub> emissions were projected to increase from the Company's Hunter  
140 facility due to changes in coal quality. Due to existing emissions control system  
141 limitations, there was really no ability for the Company to maintain the status quo  
142 regarding emissions at the Hunter plant. In addition, the Utah Department of  
143 Environmental Quality imposed a lower emission rate on those plants, expecting  
144 90 percent removal of SO<sub>2</sub>. The existing scrubbers were able to achieve a removal  
145 efficiency of only approximately 80 percent with historical fuel quality. With the  
146 expected changes in coal quality and sulfur content, the Company needed to  
147 expand its scrubbing and scrubber waste handling capabilities or face the  
148 likelihood that it would exceed its permitted emissions limit and waste disposal  
149 obligations. The Company had few options to ensure compliance, given the  
150 combination of the lowered emissions limit and the increasing sulfur content. To  
151 do nothing at the Utah facilities would not have supported the Utah Department of  
152 Environmental Quality's expectations for improved emissions control and it  
153 would have been difficult, if not impossible, to achieve the backstop trading  
154 program milestones, especially when considering Hunter coal quality. Forecasted  
155 coal quality for the Hunter plant is further discussed in the rebuttal testimony of  
156 Company witnesses Ms. Cindy A. Crane and Mr. Teply.

157 Second, of the three states participating in the backstop trading program  
158 for SO<sub>2</sub>, the Company had, and continues to have, the largest share of SO<sub>2</sub>

159 emissions. As reflected in Exhibit RMP\_\_\_\_(CSW-2R), the Company's emissions  
160 in 2000 were more than 64 percent of the total SO<sub>2</sub> emissions in the three states;  
161 that percentage, in relationship to the overall emissions subject to the backstop  
162 trading program, has increased. Despite the planned SO<sub>2</sub> emission reductions, in  
163 2010, the Company's emissions were 73 percent of the total electricity generating  
164 unit SO<sub>2</sub> emissions in the three states. An examination of the 2013 and 2018  
165 milestones contemplates that the Company's emissions will only be 60 percent of  
166 the total emissions required to meet the milestones. Importantly, due to the size of  
167 the other electric utility units and their relative contributions, the Company cannot  
168 rely on other companies to achieve larger reductions and still expect to meet the  
169 milestones.

170 **Q. Do you agree with Mr. Gebhart's policy assessment that costs per ton of**  
171 **emissions removed in excess of \$2,000 are cost prohibitive?**

172 A. No. My experience, based on review of BART determinations around the country,  
173 suggests that state regulatory authorities and the EPA have significant flexibility  
174 in their cost-effectiveness determinations and there are no maximum cost-  
175 effectiveness criteria. In recent discussions with EPA Region 8 and the Utah and  
176 Wyoming Departments of Environmental Quality, EPA Region 8 has indicated its  
177 "rule of thumb" on cost effectiveness of controls is \$5,000 per ton, despite the  
178 guidance provided in 40 CFR Part 51, Appendix Y. Other state and EPA BART  
179 determinations are higher than \$5,000 per ton.

180 **Q. Are there other reasons for the Company to make the emission reductions**  
181 **that have and will result from these projects?**

182 A. Yes. Large emitters have become the target of a multitude of enforcement actions  
183 under the Clean Air Act. In 1999, the U.S. EPA initiated an enforcement initiative  
184 against coal-fueled power plants based on alleged violations of the Clean Air  
185 Act's New Source Review program. That initiative continues today, with coal-  
186 fueled plants being closely scrutinized for compliance with the New Source  
187 Review requirements for all projects, including pollution control projects. Under  
188 the New Source Review program, a facility that emits regulated pollutants is  
189 required to obtain a permit from the EPA or a state regulatory agency prior to  
190 making a physical or operational change to an existing stationary source of  
191 pollutants that increases certain levels of emissions, unless the changes are  
192 exempt under the regulations (including routine maintenance, repair and  
193 replacement of equipment). New Source Review enforcement actions have  
194 resulted in at least 22 high profile settlements that have required utilities to not  
195 only install best available control technology with stringent emission limits, but  
196 also have resulted in the imposition of multi-million dollar penalties and the  
197 requirement to conduct supplemental environmental or environmental mitigation  
198 projects costing millions of dollars. Within the past few months, a settlement was  
199 achieved that required the Tennessee Valley Authority to invest \$3-5 billion on  
200 new and upgraded pollution controls and permanent retirement of 18 plants  
201 between 2011 and 2018. In addition, Tennessee Valley Authority was required to  
202 pay a civil penalty of \$10 million and invest \$350 million in environmental

203 mitigation projects.

204 **Q. What was the goal of the New Source Review enforcement initiative against**  
205 **coal-fueled plants?**

206 A. In announcing an expansion of the enforcement initiative in 2000, the Department  
207 of Justice indicated:

208 By filing these unprecedented lawsuits, the United States aims to  
209 reduce dramatically the amount of sulfur dioxide, nitrogen oxides  
210 and particulate matter that coal-fueled power plants release into the  
211 atmosphere. The lawsuits seek to force the facilities to install  
212 appropriate air pollution control technology to reduce emissions.<sup>3</sup>

213 Effectively, if there were insufficient reasons for power plants to reduce emissions  
214 under other regulatory requirements, the New Source Review initiative provided  
215 another tool for the EPS to effectuate emission reductions.

216 **Q. How did the New Source Review initiative impact the Company?**

217 A. As part of this initiative, the Company received requests for information under  
218 Section 114 of the Clean Air Act from EPA in 2001 for the Carbon, Naughton,  
219 Dave Johnston and Huntington plants and in 2003 for the Hunter, Jim Bridger and  
220 Wyodak plants seeking information on capital projects at its facilities over a 20  
221 year period of time and suggesting that boiler-related projects may have violated  
222 the New Source Review requirements. In an effort to avoid the negative  
223 consequences of a New Source Review enforcement action, the Company has  
224 kept EPA apprised of its emission reduction efforts. It is the Company's belief  
225 that had it not been engaged in a reasonable program to reduce its emissions  
226 through the installation of controls, the EPA would likely have pursued an  
227 enforcement action.

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<sup>3</sup> See: <http://www.justice.gov/opa/pr/2000/March/090enrd.htm>. Last accessed on 6/24/2011.

228 In addition to the enforcement initiative undertaken by EPA, large power  
229 plant emitters in the western U.S. have been subject to a multitude of citizens' suit  
230 actions. For example, the San Juan Generating Station (one of the facilities in  
231 New Mexico included in the backstop trading program) and the Four Corners  
232 Power Plant in Arizona, have been subject to multiple lawsuits over emissions  
233 based on the prominence of their emissions profile in the region.

234 **Q. Are there other environmental requirements that would require installation**  
235 **of the controls subject to review in this case?**

236 A. Yes. On March 16, 2011, the U.S. EPA proposed standards, known as the Utility  
237 Hazardous Air Pollutant (HAPs) Maximum Achievable Control Technology  
238 (MACT) that will establish numerical emission limits for mercury, particulate  
239 matter (as a surrogate for toxic non-mercury metals) and sulfur dioxide (as a  
240 surrogate for acid gases) for 1,200 existing coal-fueled electric generating units  
241 throughout the country. Under the terms of a consent decree, EPA must finalize  
242 these standards by November 16, 2011. The Clean Air Act requires facilities to be  
243 in compliance with the new standards within three years of the date of the final  
244 rule. EPA contemplated that the standards can be met with "proven control  
245 technologies to reduce these emissions such as scrubbers, fabric filters, and  
246 activated carbon injection" that are widely available.

247 The HAPs MACT requirements will apply to all 19 of the Company's  
248 owned and operated coal-fueled units, effectively by January 1, 2015. If the  
249 Company had not already been engaged in the process of achieving emission  
250 reductions of particulate matter and SO<sub>2</sub> through the installation of baghouses and

251 scrubber installations and upgrades, it would have been difficult, if not impossible  
252 to install that equipment on 19 units within a 36-month period of time. The costs  
253 to achieve compliance within a 36-month time frame would have been  
254 compressed and, as PacifiCorp's sister company (MidAmerican Energy  
255 Company) has already experienced through an unexpected 20 percent increase in  
256 the costs of a recently bid scrubber and baghouse installation, the costs are likely  
257 to be higher as the Company would compete with skilled labor and equipment  
258 with the other 1,181 coal-fueled facilities around the country that are also required  
259 to comply with the HAPS MACT.

260 System reliability issues would be a significant concern if 19 units were  
261 required to undergo major outages to install multi-year scrubber and baghouse  
262 projects basically concurrently. It should be noted that these installations are in  
263 addition to the mercury controls that may be required at facilities around the  
264 country. The three-year compliance period has resulted in a number of companies  
265 announcing plant shutdowns. Notably, American Electric Power recently  
266 announced that it would shut down approximately 6,000 megawatts of coal-fueled  
267 generation because of the MACT's short compliance window:

268 We have worked for months to develop a compliance plan that will  
269 mitigate the impact of these rules for our customers and preserve  
270 jobs, but because of the unrealistic compliance timelines in the  
271 EPA proposals, we will have to prematurely shut down nearly 25  
272 percent of our current coal-fueled generating capacity, cut  
273 hundreds of good power plant jobs, and invest billions of dollars in  
274 capital to retire, retrofit and replace coal-fueled power plants. The  
275 sudden increase in electricity rates and impacts on state economies  
276 will be significant at a time when people and states are still  
277 struggling.<sup>4</sup>

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<sup>4</sup> See: <http://www.aep.com/newsroom/newsreleases/?id=1697>, last accessed June 23, 2011.

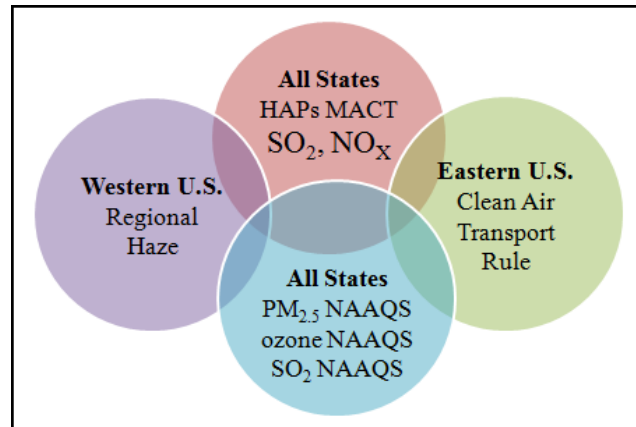
278 While plant shutdowns and complete elimination of emissions may be the goal of  
279 some, the Company's obligation to reliably supply to its customers as much  
280 electricity as they want when they want it at a reasonable cost drives its decisions  
281 to invest in controls.

282 **Q. Please explain how the controls in question meet both the Regional Haze**  
283 **Rules and are also expected to support compliance with the proposed HAPs**  
284 **MACT.**

285 While the requirements under the Regional Haze Rule and the proposed HAPs  
286 MACT are separate and addressed under different sections of the Clean Air Act,  
287 there is some overlap in the type of equipment that can be installed to comply  
288 with the two regulatory programs, as well as to ensure compliance with the  
289 National Ambient Air Quality Standards. Likewise, there is some overlap in the  
290 requirements as shown in the graphic on the next page. Installation of scrubbers,  
291 baghouses and low NO<sub>x</sub> burners will assist in achieving compliance with the  
292 Regional Haze Rules, the HAPs MACT, and the National Ambient Air Quality  
293 Standards. Further, in certain circumstances, such as the situation at Hunter and  
294 Huntington, the installation of baghouses also results in mercury reductions,  
295 which is expected to eliminate the need for additional mercury control projects  
296 and the associated ongoing operating costs for reagents on those units.

## SO<sub>2</sub>, NO<sub>x</sub>, Mercury and Particulate Emission Reduction –

### Key Regulatory Drivers



297 **Q. Are there any additional state-driven requirements the Company must meet**  
298 **that dictate the installation of the emissions controls included in this case?**

299 A. Yes. The State of Utah adopted its own mercury control regulations in 2007 that  
300 were not set aside or otherwise impacted by the vacatur of the Clean Air Mercury  
301 Rule (the predecessor rule to the HAPs MACT). The Utah rules are more  
302 stringent than the federal MACT for mercury and require facilities to meet a  
303 maximum emission rate of 0.65 pounds per trillion British thermal units  
304 (lbs/TBtu) (compared to the federal standard of 1.2 lbs/TBtu) or a minimum of 90  
305 percent control, effective December 31, 2012.

306 **Q. Were the emission control projects at issue in this case reviewed by**  
307 **stakeholders and others prior to including them in this proceeding**  
308 **requesting rate recovery?**

309 A. Yes. The projects were part of the commitments made by MEHC during the  
310 merger approval process in 2006. PacifiCorp had developed its Clean Air  
311 Initiative to implement emission reduction projects consistent with the regulatory

312 requirements. As part of the process of obtaining approval of the MEHC  
313 acquisition, MEHC made a number of specific commitments, including the  
314 implementation of emission reduction projects likely to be necessary under future  
315 emissions control scenarios at a cost of approximately \$812 million (with the  
316 understanding that additional controls may be necessary). These projects, which  
317 include the projects at issue in this case, were expected to result in a decrease of  
318 SO<sub>2</sub> emissions of more than 50%, a decrease in the NO<sub>x</sub> emissions rates of more  
319 than 40%, and a reduction in the mercury emissions rates of almost 40%. MEHC  
320 made the emission reduction commitment, along with others, to provide assurance  
321 to PacifiCorp's regulators that customers and key stakeholders would benefit from  
322 the transaction; the commitments were subject to stakeholder input and,  
323 ultimately, were included as part of the six state commissions' approvals of the  
324 transaction. The Company has provided periodic updates to the six state  
325 commissions on the status of the emission reduction controls from 2006 through  
326 2010.

327 **Q. Did the Company consider all of these requirements as it developed its**  
328 **compliance plans?**

329 A. Yes. While the Company based its emission control project planning on current  
330 regulations and compliance obligations, the Company regularly evaluates  
331 compliance scenarios for pending environmental regulations, including  
332 regulations like the proposed HAPs MACT and the potential for a multi-pollutant  
333 emission reduction bill such as that advanced by Senator Carper, in its business  
334 planning cycles.

335 **Q. Just to clarify, are you saying that Mr. Gebhart is incorrect in his assertion**  
336 **that the Company's installation of a scrubber and baghouse at Dave**  
337 **Johnston Unit 3, and scrubbers at Hunter Units 1 and 2 and Huntington Unit**  
338 **1 were not necessary or cost-effective?**

339 A. Yes. Mr. Gebhart's conclusion narrowly focuses on a faulty assumption – that the  
340 Company could have relied exclusively on the SO<sub>2</sub> backstop trading program to  
341 achieve compliance with the Regional Haze Rule. Mr. Gebhart fails to take into  
342 consideration the Company's fundamental obligation under the Regional Haze  
343 program and regional backstop trading program to avoid emissions increases.

344 **Q. Did the Company consider future environmental requirements when**  
345 **undertaking the emission reduction projects at issue in this case?**

346 A. Yes. As discussed previously in my rebuttal testimony, while the projects at issue  
347 in this case were implemented as a result of current environmental requirements,  
348 the Company also considered the need for the emission reductions and the type of  
349 controls that could be required in the future when it planned for these projects.  
350 Despite the uncertainty associated with future environmental requirements, the  
351 Company must comply with the requirements that exist today and prepare for the  
352 regulations that will be adopted in the future. To assess the potential impacts of  
353 new environmental regulatory initiatives, the Company employs environmental  
354 professionals in the business units who coordinate the dedicated staff in the  
355 environmental policy and strategy group; we review proposed and final regulatory  
356 requirements and are actively engaged in the regulatory processes in the states and  
357 at the federal level. We seek feedback from our environmental regulators to assess

358 their concerns, read and analyze legislation and regulations proposed at the state  
359 and federal levels, provide feedback on legislation, and review and comment on  
360 proposed regulations. The Company submits written comments in regulatory  
361 proceedings and participates in public hearings on the proposals, ensuring that the  
362 Company's concerns or support, as appropriate, are considered in these public  
363 forums.

364 In addition, when significant environmental rulemaking or legislative  
365 proposals are released, we assess those proposals and advise management of the  
366 Company of the potential impacts of the proposals. If the preliminary or final  
367 form of a proposal would alter the Company's business plan, those plans may be  
368 amended to reflect the likely impact on the Company to achieve compliance with  
369 the requirements within the relevant compliance period after considering our  
370 compliance options.

371 **Q. How does the Company factor future requirements into its analysis?**

372 A. The Company develops a base set of environmental assumptions that reflects the  
373 most likely scenarios to comply with air, water and waste regulations for  
374 inclusion in the development of its annual business planning process. These  
375 environmental assumptions reflect both existing and expected requirements under  
376 the most likely scenario and are utilized as the basis for the Company's integrated  
377 resource planning as well as for the Company's 10-year business plan. We also  
378 examine the actual and potential compliance timeframes and how those  
379 timeframes may be coordinated with planned plant outage schedules.  
380 Coordinating major environmental control projects with existing outage schedules

381 allows the Company to avoid additional outage time, reducing the need for  
382 replacement power, minimizes costs, and maintains system reliability.

383 **Q. When you consider the Company's compliance options, what factors are**  
384 **considered?**

385 A. There are a multitude of factors, depending on the specific regulation. If a  
386 regulation prescribes a specific emissions limit, the Company reviews the types  
387 and costs of controls that may be available to achieve the requisite emissions  
388 limit, given the specific characteristics of each unit. System impacts, reliability,  
389 capital costs, operating and maintenance costs, the life of the controls, the life of  
390 the unit itself, cost of replacement generation, and other factors are considered.

391 **Q. Does that mean the Company assumes that a unit will continue operating,**  
392 **regardless of the costs of controls?**

393 A. No. The Company does not assume a unit will continue to operate.

394 **Q. Could the Company have waited to install the controls at issue in this case?**

395 A. No. The timelines followed by the Company establish a reasonable progression of  
396 evaluation, agency coordination and decision-making for the respective pollution  
397 control projects. The projects presented in this case are extremely complex and  
398 require a significant amount of evaluation and planning to bring to fruition. The  
399 permitting processes described above are required to define the technical  
400 requirements the Company needs to move forward with establishing competitive  
401 pricing for the work and ultimately executing the projects. The timeline for  
402 securing contracts for this type of work through project completion often has a  
403 multi-year duration.

404 **Q. You discussed the potential impact of the EPA and Department of Justice**  
405 **power plant enforcement initiative and other types of litigation to reduce**  
406 **emissions. Do you agree with Dr. Fisher that the Company, rather than**  
407 **considering future requirements, has simply focused on near-term**  
408 **equipment installations to avoid litigation?**

409 A. No. If the Company had focused on near-term installations to avoid litigation, we  
410 would have already completed most, if not all, the projects. The Company has a  
411 legal obligation to conduct its operations in compliance with all laws and  
412 regulations; noncompliance carries with it the potential for significant fines and  
413 penalties as well as reputational harm. The Company did face citizens' suit  
414 litigation against the Jim Bridger plant which sought to mandate the installation of  
415 baghouses; we did not install the sought-after controls in that case. The  
416 implementation of the Company's plan is designed to reduce costs, outage times,  
417 and system impacts by spreading out the projects in a manner that is coordinated  
418 with the existing outage schedules but yet meets the prescribed compliance  
419 timeframes.

420 **Q. Shouldn't the uncertainty associated with future environmental regulations**  
421 **weigh in favor of waiting until the regulations are final to install any**  
422 **controls?**

423 A. No. The full and final scope of environmental regulations is not easily  
424 determined, particularly when rulemakings are often lengthy in their own right  
425 and just as often followed by extensive and lengthy litigation before the rule is  
426 finalized. Perfect foresight is not possible; the EPA has recently begun to

427 acknowledge that its approach to regulation makes it difficult for companies with  
428 compliance obligations to make long-term decisions on compliance. In  
429 Environmental Protection Agency Administrator Ms. Lisa Jackson's remarks  
430 prepared on the release of the Utility Hazardous Air Pollutants Maximum  
431 Achievable Control Technology standards (HAPs MACT) on March 16, 2011,  
432 she stated:

433 The proposal and implementation of these standards will also have  
434 benefits for American utilities. For the first time in twenty years,  
435 they will have certainty about the standards they must meet. And  
436 setting national standards for mercury and air toxics will level the  
437 competitive playing field and close loopholes for big polluters.  
438 Utilities that have already put pollution control technology in place  
439 will no longer have to compete with those who have delayed those  
440 investments – a group that includes almost half of the nation's  
441 coal-fired plants, which lack advanced pollution control  
442 equipment. In fact, facilities that have already taken responsible  
443 steps to reduce the release of toxins into our air will be at a  
444 competitive advantage over their heavy-polluting counterparts.  
445 And to ensure cost-effectiveness, we have proposed flexibility in  
446 meeting the standards. The technologies being required already  
447 exist in abundance, and under the proposal, power providers have  
448 four years to comply.<sup>5</sup>

449 The lack of certainty in environmental regulation is well  
450 recognized, but does not obviate existing compliance obligations. The  
451 uncertainty of future environmental regulations is also acknowledged by  
452 state utility regulators. On February 16, 2011, the National Association of  
453 Regulatory Utility Commissioners Board of Directors adopted a  
454 resolution, included as Exhibit RMP\_\_\_(CSW-3R) urging the  
455 Environmental Protection Agency to ensure, as the agency develops public

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<sup>5</sup> Remarks available at:  
<http://yosemite.epa.gov/opa/admpress.nsf/12a744ff56dbff8585257590004750b6/b7e570d651cad03852578550057011c!OpenDocument>

456 health and environmental programs, that reliability, cost, compounded  
457 economic impacts of multiple environmental rulemakings, flexibility of  
458 timeframes for compliance be considered.

459 **Q. Did the Company need to make the investments included in this case if it**  
460 **expects to continue operating the plants?**

461 A. Yes. In order to comply with the requirements that are set forth in the facilities'  
462 air quality permits, as well as meet the EPA regulatory requirements, it is  
463 necessary to install and operate the controls in question. The Company does not  
464 have plans to shut down the facilities in which the proposed investments have  
465 been made.

466 **Q. You referenced earlier in your testimony that the depreciation life of a**  
467 **facility is one of the factors considered when the Company assesses its**  
468 **compliance strategy. Why is that?**

469 A. There are significant rate and regulatory implications to early closure of a plant  
470 that is not fully depreciated. Effectively, it leaves the Company and its customers  
471 exposed to unrecovered or stranded costs.

472 **Q. Would the proposed MidAmerican Energy Holdings Company REPLACES**  
473 **program result in the Company requesting accelerated depreciation**  
474 **treatment of pollution control investments contemplated in this case?**

475 A. No. The goal of REPLACES – The Retirement Plant Act for Coal-Fueled  
476 Electricity Sources (attached as Exhibit RMP\_\_(CSW-4R)) is proposed to  
477 address the current patchwork of existing and projected emission reduction  
478 requirements and define a clear long-term regulatory path to allow owners of

479 coal-fueled power plants to economically plan for the viability of electrical  
480 generating units by phasing in unit retirements beginning with older, smaller units  
481 to allow for a smoother transition while replacement generation is brought online  
482 and newer technologies are developed. The REPLACES proposal reflects the  
483 Company's view that it does not make economic sense to install significant  
484 emission control on units that are likely to retire because of the creation of  
485 stranded cost for limited environmental benefit. Under REPLACES, all existing  
486 coal-fueled electric generating units would be retired, controlled or retrofitted  
487 over a period of time and near-term environmental regulatory relief would be  
488 granted for facilities that retire by 2020. Similar proposals have been advanced by  
489 other organizations seeking near-term regulatory relief but to date none have been  
490 adopted.

491 **Q. Is the Company's proposed REPLACES program, and those like it, intended**  
492 **to provide a planning environment that minimizes customer risks associated**  
493 **with capital planning efforts in an uncertain planning environment?**

494 A. Yes. These efforts are intended to harmonize environmental requirements with the  
495 nation's desire to shift to cleaner energy sources in a way that allows for a  
496 smoother transition and minimizes costs and risks by clearly identifying the  
497 requirements and timeframes that must be met, rather than being faced with  
498 constantly changing environmental requirements that make long-term investment  
499 decisions difficult.

500 **Q. Does the Company believe that any of the emissions control equipment**  
501 **subject to review in this proceeding will not be necessary as a result of future**  
502 **environmental requirements?**

503 A. No. The Company does not anticipate that environmental regulations will become  
504 less stringent and history demonstrates that regulations become more stringent  
505 over time. The controls subject to review in this proceeding are necessary to allow  
506 the Company to continue operating these facilities given that increasing  
507 stringency. Further, the Company's analysis suggests that these controls place the  
508 facilities in a position to continue to generate reasonably priced electricity under  
509 contemplated environmental regulations, even if greenhouse gas legislation is  
510 adopted. The Company's analysis suggests that the cost of carbon under a  
511 regulatory regime for greenhouse gas emissions would have to approach \$40 per  
512 ton with gas prices sustained below the \$7 - \$9/mmBtu range to begin to make  
513 replacement of coal-fueled resources cost effective prior to 2030. Utilizing  
514 greenhouse gas reduction requirements as a basis for current investment decisions  
515 is highly speculative given that the current Congressional activity is focused on  
516 delay or repeal of the EPA's authority to regulate greenhouse gases, and not on a  
517 comprehensive legislative effort to reduce greenhouse gas emissions.

518 Additionally, in the course of applying environmental requirements to the  
519 Company's facilities, the respective state Department of Environmental Quality or  
520 the EPA consider what constitutes cost-effective emission reductions, taking the  
521 position that all cost-effective reductions are required. As discussed earlier in my  
522 testimony, in the context of the Regional Haze program's BART determinations,

523 the reviewing environmental agency must consider:

524 (a) the costs of compliance;

525 (b) the energy and non-air quality environmental impacts of compliance;

526 (c) any existing pollution control technology in use at the source;

527 (d) the remaining useful life of the source; and,

528 (e) the degree of visibility improvement which may reasonably be anticipated  
529 from the use of BART.

530 Within the foregoing mandatory BART factors are considerations such as  
531 greenhouse gas regulation and other environmental regulatory drivers that may  
532 have an impact on the remaining useful life of the source are considered.

533 **Q. Drs. Steinhurst and Fisher, on behalf of the Sierra Club, suggest that the**  
534 **Company should not install controls or recover the cost of installed controls**  
535 **until all regulations are considered, finalized, and quantified. Do you agree?**

536 A. No. If the Company waited until the rules are well-defined and final, it would  
537 have no choice but to shut down units because it would not be able to achieve  
538 compliance in a timely manner and operating out of compliance is not an option.  
539 It is notable that the Sierra Club has taken the position in the case of approval of  
540 Oklahoma's Regional Haze state implementation plan that the state's proposal is  
541 not stringent enough and additional controls should be required as contemplated  
542 by the EPA's proposed federal implementation plan (installing scrubbers or  
543 switching to natural gas at three plants in three years at a cost of approximately \$1  
544 billion). Despite facing the same scope of environmental issues, Sierra Club does  
545 not advocate in Oklahoma that the plants wait to install those scrubbers until the

546 outcome of the coal combustion byproducts proposal, the Section 316(b) cooling  
547 water intake structure proposal, or effluent limit guidelines are final.

548 **Q. Why can't the Company wait until all the regulations are final to install**  
549 **controls?**

550 A. It is imprudent for a utility the size of PacifiCorp to assume it can install all  
551 required controls under a "just-in-time" plan. This approach to compliance poses  
552 a significant risk to the Company and its stakeholders; as a practical matter, it  
553 cannot be economically achieved on a system the size of the Company's.  
554 Emission reduction projects are complex, multi-year projects. Trying to install  
555 multiple controls within the same short time frames poses a significant risk of  
556 noncompliance with penalties that can be substantial. Even if a regulatory agency  
557 did not impose penalties for failing to achieve emission reduction deadlines, third  
558 parties have not hesitated to bring lawsuits against the operators of those facilities  
559 that miss deadlines or are otherwise not in compliance with permit and emission  
560 limits. Indeed, the federal clean air act specifically allows for private citizen  
561 enforcement of air quality requirements.

562 Considering future environmental regulatory requirements such as the  
563 HAPs MACT when planning compliance projects for existing regulations avoids  
564 the concern many companies are expressing about the short three-year compliance  
565 period. Because the HAPs MACT had its genesis in the Clean Air Mercury Rule,  
566 which was issued by the Environmental Protection Agency in 2005, but vacated  
567 by the court in 2008, the Company was able to, and did, consider the potential  
568 impacts of a mercury rule on its equipment decisions. If a company waits for a

569 rule to become final to begin to develop its compliance strategy, it may find itself  
570 in a situation similar to facilities in Oklahoma where the Environmental  
571 Protection Agency recently rejected the state's implementation plan for Regional  
572 Haze and has required that companies install scrubbers on three plants or switch  
573 to natural gas within three years at a cost of approximately \$1 billion. The  
574 permitting, procurement and installation of such equipment in such a short time  
575 frame is challenging, if not impossible, and creates significant inefficiencies and  
576 cost increases.

577 **Q. Are the Regional Haze regulations final?**

578 A. Yes. The Regional Haze regulations were initially adopted in 1999, but were  
579 appealed and revised with amended regulations being issued in 2005. Both Utah  
580 and Wyoming submitted their initial Regional Haze state implementation plans in  
581 2003, in 2008, and again in 2011, focusing on meeting emission reduction goals  
582 to improve visibility. The 2011 state implementation plan submittals are final  
583 insofar as state action is considered; these submittals have not yet been approved  
584 by the Environmental Protection Agency but, nonetheless, do result in substantive  
585 requirements being imposed on the Company's facilities. These requirements are  
586 confirmed in the Wyoming Department of Environmental Quality's Decision  
587 Document on the Company's BART permit applications dated December 31,  
588 2009, noting:

589 The entire submittal is currently undergoing EPA review and the  
590 State has no control over how long the EPA takes to review the  
591 SIP. The State, however, does not wait for EPA to complete its  
592 review before implementing a SIP. . .The SO<sub>2</sub> levels have shown  
593 compliance with the milestones and continue to demonstrate  
594 declining SO<sub>2</sub> emissions levels.

595 On June 15, 2011, a consent decree was published in the Federal Register to settle  
596 a complaint filed by WildEarth Guardians asserting that the EPA had failed to act  
597 on state and federal implementation plans as required by the Clean Air Act. Under  
598 the agreement, the EPA is required to approve Wyoming's state implementation  
599 plan or issue a federal implementation plan by October 15, 2012.

600 **Q. Do you believe that the Company may need to “completely revamp its**  
601 **pollution controls once final EPA rules are issued” as asserted by Dr.**  
602 **Steinhurst?**

603 A. No. The controls at issue, including scrubbers, low NO<sub>x</sub> burners, and baghouses  
604 are important controls to meet both existing and future environmental regulations.  
605 I am not aware of any situation where state-of-the-art controls, such as scrubbers,  
606 low-NO<sub>x</sub> burners or baghouses that represent best available control technology or  
607 best available retrofit technology are required to be “completely revamped.” Even  
608 if additional controls for NO<sub>x</sub>, such as selective catalytic reduction (SCR) are  
609 required, the installation of combustion controls such as low-NO<sub>x</sub> burners is an  
610 important step in achieving lower-cost NO<sub>x</sub> reductions so that post-combustion  
611 controls are more efficient and operating costs are lower.

612 **Q. Why doesn't the Company wait until it knows the outcome of all air quality,**  
613 **waste and water rules to implement its environmental projects?**

614 A. The structure of the Environmental Protection Agency and the nature of its  
615 rulemaking process are not conducive to the agency producing coordinated air  
616 quality, waste and water rules for the electricity sector; these media-based rules  
617 address different issues through varying methods with different compliance

618 timeframes. Nonetheless, the Company undertakes efforts to ensure that the  
619 potential compliance requirements for all these rulemaking activities are  
620 understood and reflected in its plans, making decisions based on the best available  
621 information at the time the decisions are made and updating that information as  
622 additional details on requirements become available. Environmental regulations  
623 and the cost of implementation are only one factor that influences whether or not  
624 to make investments in environmental projects; the Company also must consider  
625 the cost of alternative generation. Future natural gas prices, construction costs for  
626 renewable generation, and associated transmission availability and costs are also  
627 among the factors that are contemplated in a determination of whether it is  
628 economic to install controls at coal-fueled plants.

629 **Q. Do you agree with Dr. Fisher’s analysis of the environmental requirements**  
630 **the Company will face through 2020?**

631 A. No. While Dr. Fisher generally provides an accurate snapshot of the anticipated  
632 regulatory requirements, he overstates the impact on the Company’s facilities  
633 and/or asserts that the Company has failed to consider or plan for its compliance  
634 obligations simply because there “are no public records” to address those plans.  
635 The Company filed an environmental plan with the six state commissions it is  
636 regulated by during the acquisition of PacifiCorp by MidAmerican in 2006. That  
637 plan serves as the basis for implementation of these and other compliance  
638 projects. In addition, there are numerous public records that document the  
639 Company’s compliance plans, including the permit application process, the  
640 Wyoming BART process (see Mr. Teply’s direct testimony - Exhibit

641 RMP\_\_(CAT-1)), periodic open meetings providing updates to the public  
642 service commissions and the integrated resource plan. All these public records  
643 demonstrate the Company's understanding of its compliance obligations based on  
644 decisions made by the Company after internal meetings; these decisions are  
645 ultimately reflected in the Company's business plans.

646 **Q. Does this conclude your rebuttal testimony?**

647 A. Yes.