

Rocky Mountain Power
Docket No. 10-035-124
Witness: Richard W. Sprott

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF UTAH

ROCKY MOUNTAIN POWER

Rebuttal Testimony of Richard W. Sprott

Environmental Controls Investments

June 2011

1 **Introduction**

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

3 A. Richard W. Sprott, 35 Taos Drive in Angel Fire, NM. I am the principal and sole
4 proprietor of Bear Claw Environmental Consulting.

5 **Qualifications**

6 **Q. Briefly summarize your education and experience.**

7 A. My full CV is attached as Appendix A. I received a Bachelor of Arts degree in
8 chemistry from Grinnell College, did three years of graduate study in analytical
9 chemistry at the University of New Hampshire, and hold a Masters of
10 Environmental Management in Air and Water Resources from the Nicholas
11 School of the Environment at Duke University.

12 I was a career officer in the US Air Force serving as an aircraft
13 maintenance officer in fighter aircraft, weapon system development, and finally
14 environmental management at Hill Air Force Base, Utah where I retired in 1992.

15 I worked in the Utah Department of Environmental Quality from 1994
16 until my retirement in December 2008. I began as an air quality permit writer and
17 subsequently served as Manager of the Air Permitting Branch, Manager of the
18 Planning Branch, and Director of the Division of Air Quality from 2000 to 2007.
19 In May 2007, I was appointed Executive Director of the Department of
20 Environmental Quality (UDEQ) by Governor Jon Huntsman, Jr.

21 **Q. What experience did you have working with the utility industry while at the
22 Utah Department of Environmental Quality?**

23 A. I was the lead air quality operating permit writer for the utility sector and Acid

24 Rain Program Coordinator from 1994 until 1997. I wrote all the operating permits
25 for the PacifiCorp coal-fired power plants as well as the initial operating permit
26 for the Deseret Generation and Transmission Bonanza Unit. I was closely
27 involved in utility sector issues in every position I held in the department from Air
28 Quality Implementation Plans, new source review (NSR) permitting, regional
29 haze, and compliance. During the last several years I was responsible for climate
30 change policy and planning in the Division of Air Quality and the Department. I
31 shared that role with Dianne Nielson for Governor Huntsman.

32 **Q. Please provide detail about your experience with the regional haze program**
33 **specifically.**

34 A. I participated in planning and implementing the regional haze program in Utah
35 and the west for 11 years from 1997 until 2008. I was a leader in the Western
36 Regional Air Partnership where I worked with the Market Trading Forum that
37 negotiated the sulfur dioxide (SO₂) milestones and backstop trading program, was
38 co-chair of the Initiatives Oversight Committee, Liaison to the Joint Fire
39 Emissions Forum, co-chair of the Air Managers Committee, and member of the
40 Board. I was intimately involved in a wide range of regional haze work that often
41 constituted my primary work for several years.

42 **Q. Have you ever provided testimony before regulatory bodies?**

43 A. I have testified numerous times before the Utah Air Quality Board, once before
44 the New Mexico Environmental Improvement Board, and once during the recent
45 arbitration between PacifiCorp and Deseret Generation and Transmission.

46 **Purpose of Testimony**

47 **Q. What is the purpose of your testimony?**

48 A. I have been retained by PacifiCorp to provide expert testimony based on my role
49 as the responsible environmental regulator during the time these projects were
50 planned and permitted as to their prudence, use, and usefulness. The purpose of
51 my testimony is to rebut intervenor claims concerning the environmental projects
52 included in this rate case. The topics will address:

- 53 1) why the projects were required by environmental regulations
54 2) why projects did not go beyond regulations and were not
55 premature,
56 3) why the costs for the projects are reasonable, and
57 4) what additional air quality regulations the projects address other
58 than regional haze.

59 I will also share my experience with how the regulated community
60 approaches multiple air quality programs simultaneously.

61 **Summary**

62 **Q. Please provide a summary of your testimony.**

63 A. My testimony begins with background information that addresses the key issues. I
64 will briefly review state and federal regional haze regulations that explain why
65 PacifiCorp's environmental projects were not "voluntary" or premature as some
66 intervenors imply. Next I will provide information that shows that the projects
67 were cost effective. Then I will address additional air quality regulations covered
68 by the projects. Finally, I will provide comments and rebuttal on specific details

69 in the testimony of the following witnesses: Mr. Matt Croft, Division of Public
70 Utilities (DPU); Mr. Howard Gebhart, Utah Association of Energy Users (UAE);
71 Dr. Jeremy Fisher, Sierra Club; and Dr. William Steinhurst, Sierra Club.

72 **Background**

73 **Q. Could you summarize the visibility and regional haze programs?**

74 A. In 1977, Congress declared a goal to prevent future pollution and remedy past
75 pollution that would impact visibility at Class I areas. Class I areas are determined
76 by the federal government as natural areas worthy of the highest possible level of
77 protection. There are five Class I areas located in Utah: Arches National Park,
78 Canyonlands National Park, Capitol Reef National Park, Bryce Canyon National
79 Park, and Zion National Park. States must submit implementation plans to address
80 visibility. The Act also lists 26 large industrial sectors and sources with emissions
81 over 250 tons per year that might be required to install Best Available Retrofit
82 Technology (BART) if built between 1962 and 1977. Coal-fired power plants
83 over 250 mmBtu per hour were among the 26 industrial sectors.

84 The 1990 amendments to the Act added new requirements to address
85 visibility impairment caused by thousands of large and small sources of pollution
86 transported on a more regional basis, regional haze. It also created visibility
87 transport regions and commissions to propose remedies for those regions. The
88 Grand Canyon Visibility Transport Commission (GCVTC) was the only
89 commission specifically established in the Act.

90 **Q. Is the Regional Haze program different in the West, and if so, how?**

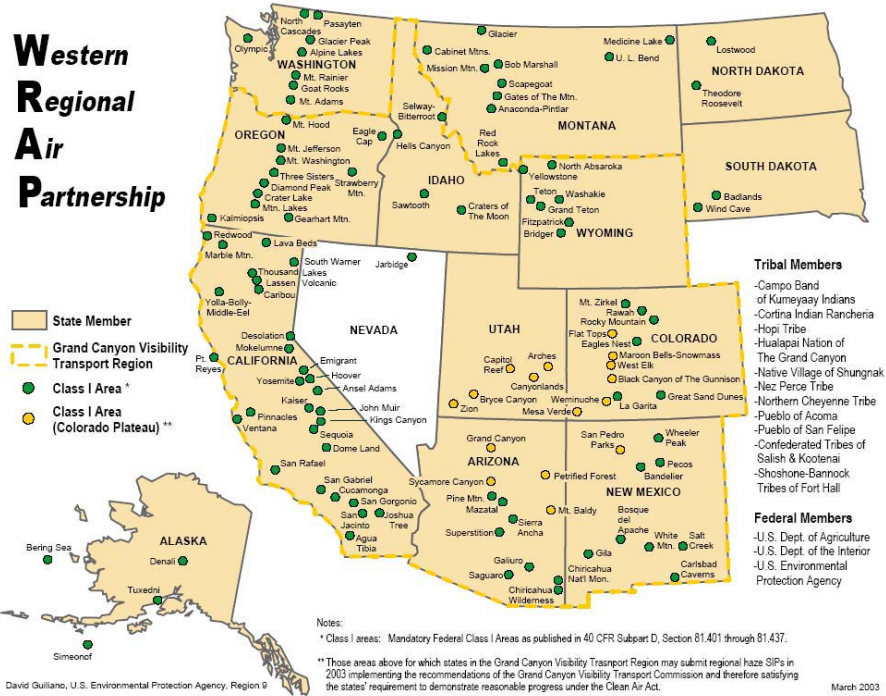
91 A. Yes. As mentioned above, the GCVTC was the only regional haze commission

92 explicitly chartered by Congress in the Act. The GCVTC region included nine
93 states and 211 tribal lands. Commission members were Arizona, California,
94 Colorado, Idaho, Nevada, New Mexico, Oregon, Utah, and Wyoming and the
95 leaders of four Indian tribes.

96 The GCVTC issued a 115 page report on June 10, 1996, with nine major
97 findings. Visibility impairment remedies in the report were more broadly focused
98 than EPA's previous visibility regulations. The centerpiece of the report was a
99 backstop sulfur dioxide (SO₂) trading program that would be triggered if
100 milestones for emission reductions in the region were not met. The
101 recommendations had strong support among industry because the policies shared
102 the burden more fairly, created more certainty, and provided flexibility.

103 **Q. Please summarize EPA's Section 308 and 309 regulations on regional haze**
104 **and what differentiates them?**

105 A. EPA promulgated the regional haze regulations in 1999. 40 CFR 51.308 was
106 based on traditional command and control rules focused on large industrial
107 sources. A second rule, 40 CFR 51.309, was the direct result of the GCVTC's
108 recommendations. Its scope was limited to nine states and 16 Class I areas on the
109 Colorado Plateau. Figure 1 (USEPA) is a map that shows the GCVTC Class I
110 areas covered by Section 309 in yellow (light spots) and all the others in the west
111 in green (dark spots). Note there are no "green" dots in Utah so that state uses the
112 GCVTC recommendations and Section 309 exclusively.



113 The rule used by most states is Section 308 that centers on BART for large
 114 industrial sources. Emissions limits are established on a case-by-case basis
 115 considering five factors: the technology available, the costs of compliance, the
 116 energy and non-air quality environmental impacts of compliance, any pollution
 117 control equipment at the facility, the remaining useful life of the facility, and the
 118 improvement of the proposed technology.

119 States using Section 308 determine what large industrial sources are
 120 “BART-eligible” and then determine which of the eligible sources might impair
 121 Class I area visibility and must install BART control technology. The rules do
 122 provide an alternative to BART [308(e)(2)].

123 Both Utah and Wyoming used the alternative program offered in Section
 124 309 of the rule so BART-eligible sources in Utah and Wyoming are subject to a
 125 pollution control framework outside the BART system including the five-factor

126 analysis and cost calculations in EPA BART guidance. However, the EPA
127 requires that alternative programs cut emissions to a level “better than BART” so
128 that better progress toward visibility improvement is made compared to the
129 normal BART program.

130 The GCVTC found that SO₂ was the major pollutant causing regional haze
131 in the West. Consequently, the focus of Section 309 was a framework of regional
132 SO₂ emission reduction milestones and a backstop SO₂ trading program that
133 would be triggered if the milestones were not met.

134 **The Projects Were Required By Environmental Regulations**

135 **Q. Did those regulations require the Company to make the pollution control**
136 **investments that are at issue in this case?**

137 A. Yes.

138 **Q. Why were PacifiCorp’s pollution control projects mandatory rather than**
139 **voluntary?**

140 A. A 2006 federal regional haze rule revision mandated emission limits for all
141 BART-eligible units, so PacifiCorp had a clear legal obligation to reduce SO₂
142 emissions to ensure the milestones were met. The emission limits are in the SIPs
143 and permits in both Utah and Wyoming.

144 **Q. So was the Company required to meet the milestones?**

145 A. Yes.

146 **Q. What is the “Annex” and how were it and the SO₂ milestones created?**

147 A. The process to create the Annex and milestones that later became law was similar
148 to how a Legislature writes laws on controversial issues. A committee will often

149 bring the stakeholders together to understand what the views and interests are.
150 There may be a process of negotiation to arrive at some consensus on what should
151 be in the law. Each stakeholder usually has to “volunteer” to do or give up
152 something. If there is some agreement, then hearings might be held and a bill
153 drafted, with ultimate passage into law. Once the law is passed, the points that
154 were in the negotiations are no longer voluntary; they are now the law. The
155 GCVTC and its successor, the Western Regional Air Partnership (WRAP),
156 operated in a similar fashion.

157 The “Annex” was a supplement to the GCVTC report required by EPA to
158 provide details of the SO₂ reduction program, specifically the emission milestones
159 and backstop trading program. EPA amended the Section 309 rule to incorporate
160 the provisions of the Annex on June 5, 2003, thus making both the milestones and
161 backstop trading program legal regulatory requirements. The Annex rulemaking
162 was litigated extensively by coal interests, but was subsequently amended by EPA
163 in its current and final form on October 13, 2006. This rule also required sources
164 to have enforceable emission limits to achieve the milestones.

165 **Q. Could you briefly describe how the milestones were set?**

166 A. The WRAP Market Trading Forum created the milestones “bottom up”, summing
167 estimated emissions from BART-eligible sources in the states that could use
168 Section 309. This work was accomplished in the late 1990s so there was a good
169 deal of uncertainty regarding the future of major copper smelters, electrical
170 demand, new power plants, what SO₂ controls sources might install, and what
171 EPA would decide regarding BART guidelines.

172 The main debate in milestone negotiations was over timing of controls
173 versus tons of SO₂ reduced. PacifiCorp and others wanted to reduce fewer tons
174 and to delay emission controls for as long as possible so they could prepare. The
175 States, federal land managers, and environmental advocates wanted more tons
176 reduced ASAP. The outcome reflects a balance of these interests. However, the
177 milestones had to conform to the GCVTC recommendation of a 50-70 percent
178 reduction by 2040 and also provide greater reasonable progress than BART
179 [309(d)(4)(i)].

180 The greater reasonable progress analysis in the Annex made numerous
181 assumptions so the materials used to document milestone development were
182 heavily caveated and not intended to bind companies or states to the specifics of
183 the planning document. PacifiCorp and other companies were part of the
184 stakeholder process that created the milestones that they later would be required
185 to achieve through enforceable emissions limits.

186 **Q. So States with Section 309 SIPs must ensure milestones are met to comply**
187 **with federal regulations?**

188 A. Yes. Many were concerned that if participation in the milestone program were
189 truly voluntary, SO₂ reductions would not happen. So the 2006 federal regional
190 haze rule revision was promulgated, EPA required federally enforceable emission
191 limits for all BART-eligible sources [308(e)(2)(i)(B)] that were part of an
192 alternative program like those in Utah and Wyoming. That meant that PacifiCorp
193 and others had to get permits with better than BART emission limits and the states
194 had to put the limits in the regional haze SIPs. These are enforceable by both the

195 state and EPA. If PacifiCorp had failed to apply for these permits, the states and
196 EPA could have pursued enforcement action.

197 **Q. You keep referencing Section 308 when you talk about Section 309. Why?**

198 A. Section 308(e)(2) provides all states with an opportunity to develop an alternative
199 program to BART and describes the basic requirements. Section 309 points back
200 to these same basic program requirements rather than repeat them.

201 **Q. When did PacifiCorp have to get its permits?**

202 A. There is generally a long lead time to get air permits approved and a project
203 constructed so that SO₂ is being reduced in time to meet particular milestones.
204 The projects in this case represent actions by the Company to ensure emissions
205 are reduced in a timely fashion compared to the milestones. The Company was
206 required to obtain permits far enough in advance so that the actual projects could
207 be engineered and built with sufficient margin to avoid any period of non-
208 compliance with these milestones. Based upon my experience and review,
209 PacifiCorp's applications for permits were submitted in a reasonable timeframe
210 compared to known or likely timeframes for completing the application process,
211 and with respect to when the Company would be required to meet milestone
212 benchmarks.

213 **The Projects Did Not Go Beyond Regulatory Requirements and Were Not Premature**

214 **Q. Certain interveners claim that the Company's pollution control investments**
215 **went beyond what was required of the Company or exceeded BART. Is that a**
216 **valid criticism?**

217 A. No, it is not. First, PacifiCorp's emission controls *had to be* better than BART to

218 demonstrate greater reasonable progress. Second, a five-factor BART analysis is
219 specifically NOT required for SO₂ milestones sources so the associated cost test
220 cannot be used to justify less stringent technology. Finally, the Company needed
221 to ensure an adequate margin for compliance with the 2008 emission limits.

222 **Q. What does it mean to say the Company’s projects had to be “better than**
223 **BART?”**

224 A. “Better than BART” is really shorthand for greater reasonable progress meeting
225 visibility goals than would be achieved through the application of source-specific
226 BART emission limits. This is in 51.309(g)(2)(ii) and it is a mandatory rule for
227 the Company. This demonstration of greater progress is made with the milestone
228 analysis that is contained in the Utah Regional Haze SIP that shows the 2018 goal
229 reduces more tons of SO₂ than BART would on the sources in the region and
230 progress to the final goal is steady and continuous throughout the planning period.
231 The milestones are achieved by reductions in each state.

232 **Q. How did Utah and Wyoming go about demonstrating their 309 programs**
233 **provided greater progress than BART and what did this mean for**
234 **PacifiCorp?**

235 A. Utah used EPA’s presumptive BART levels and Wyoming used the five-factor
236 BART analysis. PacifiCorp had to submit permit applications with emissions
237 limits superior to the respective better than BART “yardsticks.” Once these 309
238 analyses were complete and the proposed measures were determined to be better
239 than BART, the compliant measures were published in SIPs and PacifiCorp’s
240 permits. PacifiCorp certainly did not volunteer something it didn’t have to do by

241 federal and state law. Section 51.309(g)(2)(ii) and the permits issued to the
242 Company required this.

243 **Q. Is this documented?**

244 A. Yes. It is in the Utah SIP in Section D. I have also verified this requirement with
245 Coleen Delaney and others at the Utah Division of Air Quality and Steve Dietrich,
246 Director of the Wyoming Division of Air Quality.

247 **Q. What did PacifiCorp have to do to reduce SO₂?**

248 A. PacifiCorp had to propose projects that were better than BART. The scrubber
249 projects were evaluated by the Utah Division of Air Quality to ensure that they
250 were better than EPA's presumptive BART limit of 0.15 lb/mmBtu.

251 **Q. Does Section 309 require PacifiCorp's BART sources to undergo the five-
252 factor BART analysis to determine appropriate controls?**

253 A. No. Federal regulation 40 CFR 51.309(g)(2)(ii) is absolutely unequivocal on this
254 issue. It states that BART is satisfied if the program's emission milestones show
255 greater progress than case-by-case BART. The milestones for SO₂ have been
256 established so SO₂ BART has been satisfied and no five-factor analysis is
257 necessary for SO₂.

258 **Q. Why didn't PacifiCorp insist on a five-factor analysis in Utah?**

259 A. It wasn't up to the Company. The Division of Air Quality was firmly set against
260 using a five-factor analysis for SO₂ and would not have allowed that test instead
261 of presumptive BART.

262 **Q. Finally, does the Company's need to ensure compliance affect its choice of**
263 **technology?**

264 A. Absolutely. The technology choice must provide an ample margin of compliance.
265 All responsible companies in all sectors use this principle. PacifiCorp must meet
266 all emissions limit on a "continuous basis." That means the equipment must be
267 robust and capable of handling process changes like higher sulfur coal. In
268 addition, EPA has cracked down in recent years on excess emissions during
269 startup, shutdown, and maintenance. In fact, their policy is that even during these
270 events, exceeding an emissions limit constitutes a violation unless the company
271 can prove otherwise. This is particularly critical for opacity and particulate
272 emissions, but applies to all pollutants. As others have testified, EPA has a special
273 enforcement initiative for coal-fired power plants that makes compliance margins
274 a major consideration to avoid prosecution. Based on the information reviewed as
275 part of this case, PacifiCorp was prudent in ensuring robust scrubber design,
276 especially in light of the increasing sulfur in its coal and other operational issues
277 presented.

278 **Q. If the Commission assumes that PacifiCorp had to make *some* pollution**
279 **control investments, is it your opinion that it had to make *all* of the**
280 **investments that it did make?**

281 A. Yes. The primary issue was that technology had to be better than BART, and it
282 has to be better at all BART-eligible units. Second, cost analyses such as that in
283 the typical five-factor analysis were not required nor could they be used to justify
284 something less than better than BART. Finally, equipment and design choices had

285 to ensure an adequate margin of compliance with the new emission limits now
286 and well into the future under all operating conditions. PacifiCorp's investments
287 did not "overshoot" the regulatory bar; they were all necessary.

288 **Q. Were the Pollution Control Projects Premature?**

289 A. No. First, the milestones have been adjusted downward and PacifiCorp's share of
290 SO₂ reductions has increased dramatically. Second, major SO₂ emitters need to
291 reduce early enough to avoid getting caught by the 2013 milestone assessment or
292 the 2018 final compliance year. Finally, an adequate margin of compliance is not
293 just getting below an emission limit; it is also getting ahead of the decreasing
294 milestones. I believe both Ms. Cathy S. Woollums and Mr. Chad A. Teply will
295 elaborate on these issues in greater detail.

296 **The Costs for the Projects Are Reasonable**

297 **Q. Why are the costs reasonable?**

298 A. PacifiCorp's emission controls had to be better than BART to demonstrate greater
299 reasonable visibility progress and may not always have been the cheapest option.
300 Also, federal regulations preclude PacifiCorp from cutting emissions at plants that
301 might be less expensive if it means less improvement in visibility.

302 **Q. In your opinion, was it prudent for PacifiCorp to install equipment that was**
303 **better than BART?**

304 A. Yes, because it had no choice. 51.309(d)(4)(i) is clear...the alternative program
305 must demonstrate *better* reasonable progress than BART. PacifiCorp's projects
306 had to result in emissions that were at a lower level than BART, either
307 presumptive BART in Utah or the five-factor analysis in Wyoming. It was

308 required by both state and federal rule. To not install such equipment as it did, or
309 to install lesser equipment would have put the Company in a scenario of non-
310 compliance.

311 **Q. Since the milestones apply to a three state region, can't PacifiCorp choose**
312 **what plant or plants to modify based on individual unit cost effectiveness?**

313 A. No. EPA's rules for an "alternative" program (such as under Utah's SO₂
314 Milestone Program – Utah SIP Section XX.E.3, April 6, 2011) do not allow states
315 (and therefore companies) to freely choose where reductions are made prior to a
316 backstop trading program.

317 Specifically, 40 CFR 308(e)(3) prohibits the distribution of emissions
318 from being substantially different than under source-specific BART. All four
319 BART-eligible PacifiCorp units are very close to several Class I areas in Utah.
320 SO₂ sources close to Class I areas have the greatest visibility impact and must be
321 controlled the most. If reductions were not at the specific sources with the greatest
322 impact on Class I areas, the SIP would not be deemed to show better reasonable
323 progress than BART. If PacifiCorp had reduced its emissions at its Wyoming
324 units simply because they appeared cheaper for the Company (or even the
325 ratepayer), then the Utah Class I areas would not have benefited from the same
326 visibility improvements and PacifiCorp's permits could not and would not have
327 been approved.

328 **Q. Certain interveners claim the pollution control investments were not cost**
329 **effective. In your opinion were the subject pollution control projects cost**
330 **effective or not?**

331 A. Yes. PacifiCorp's emission controls had to be better than BART to demonstrate
332 greater reasonable visibility progress so they had to be top quality. In addition,
333 PacifiCorp could not simply enhance its emission reductions at its Wyoming
334 plants (due to the relative expense of retrofits) and then chose not to reduce
335 emissions in Utah at units in close proximity to Class I areas. EPA requires
336 appropriate geographic reductions to protect all Class I areas.

337 Based upon my experience and review of the cost data provided to me in
338 support of this case, it is my opinion that the decrease in SO₂ that will be brought
339 about by the pollution investments made by the Company are cost effective. I
340 believe Mr. Teply provides additional information in this regard in his testimony.

341 **Additional Air Quality Regulations**

342 **Q. Are there other regulations that might have been drivers for these projects?**

343 A. Yes, the Utah mercury rule and the upcoming Utility MACT.

344 **Q. What does PacifiCorp have to do for the Utah mercury rule?**

345 A. In May of 2007 the Utah Air Quality Board approved rules to limit mercury
346 emissions in Utah. Most of the rule implemented the federal Clean Air Mercury
347 Rule that was subsequently vacated. However, the rule also established state
348 emission limits for electrical generating units with a heat capacity in excess of
349 1,500 mmBtu per hour that were in operation as of November 17, 2006. These
350 sources must limit emissions to 6.5×10^{-7} pounds of mercury per mmBtu or

351 demonstrate a 90 percent reduction in emissions by December 31, 2012. The
352 projects already completed and others contained in this case should allow
353 PacifiCorp to meet or very nearly meet this standard at its Huntington and Hunter
354 Plants.

355 **Q. How do these projects help PacifiCorp meet requirements that might be in**
356 **the final Utility MACT?**

357 A. The projects have a high probability of meeting or helping to address the three
358 major pollutant categories.

359 EPA has proposed a direct emissions limit for mercury and surrogate
360 emission limits for other pollutants as follows:

- 361 • Mercury: numeric emission limit
- 362 • Acid gases: numeric emission limit on hydrochloric acid or SO₂ as
363 a surrogate
- 364 • Non-mercury metallic toxic pollutants (arsenic and chromium):
365 numeric emission limit for total particulate matter as a surrogate

366 PacifiCorp baghouse and scrubber projects control all these emissions.
367 Baghouses are very effective controlling mercury from Utah coal. The same
368 devices are also state-of-the-art for particulate pollution containing metallic toxic
369 pollutants. Finally, the scrubbers for these units are designed for high efficiency
370 SO₂ removal that will also be effective for other acid gasses.

371 The exact emission limits that will be finalized with the November
372 rulemaking are not certain. It is certain that this rule will be litigated. The only
373 question is when a rule will become effective. Whatever the outcome,

374 PacifiCorp’s projects definitely have the co-benefit of partial or full compliance
375 with the Utility MACT when it does go into effect.

376 **Specific Witness Rebuttals**

377 Croft - DPU

378 **Q. Does Mr. Croft’s testimony accurately describe the concepts and obligations**
379 **of the regional haze programs?**

380 A. Yes. While Mr. Croft professes no background in this area, he has certainly
381 communicated the key concepts and apparent contradictions succinctly. He has
382 summarized the overarching framework for Section 309 and rightfully identified
383 the apparent dilemma of “voluntary” measures to meet the SO₂ milestones. He
384 has also fairly described how Utah and Wyoming went about their “better than
385 BART” determinations. Finally, he has noted how the Arbitration Award is
386 different from this proceeding and some of the important information that was not
387 apparently considered or given deference in the Arbitrator’s report.

388 Gebhart - UAE

389 **Q. Considering all your testimony thus far, does Mr. Gebhart accurately**
390 **characterize the Utah and Wyoming 309 programs and PacifiCorp’s**
391 **obligations?**

392 A. No, absolutely not.

393 **Q. Please explain.**

394 A. Mr. Gebhart has done a very thorough analysis, however it has no applicability
395 for PacifiCorp units under Section 309 SO₂ regulatory requirements in Utah and
396 Wyoming. The process and analysis he uses is for a standard Section 308 BART

397 program. This is an important distinction since it determines the emission limits,
398 what control equipment is required, and the costs allowable.

399 Furthermore, there is no consideration or apparent understanding of the
400 SO₂ milestone and backstop trading programs and how emission reduction
401 strategies are developed and implemented in his testimony. The suggestion that
402 SO₂ reduction measures from companies with BART-eligible sources are purely
403 “voluntary” is ludicrous. A specific federal rule requires enforceable emission
404 limits. Admittedly, the regular use of the term “voluntary” in the Annex title and
405 other documents is confusing for those who may not be familiar with the 309
406 program; however state regulators and EPA would never allow a company like
407 PacifiCorp to escape rigorous SO₂ controls. As discussed earlier, the only thing
408 truly “voluntary” for PacifiCorp was the specific controls for their units. Even
409 timing flexibility was limited by the milestone schedule and the requirement for
410 source emission limits in the 2008 SIP.

411 Furthermore, nowhere in Section 309 is a BART analysis or cost test
412 required to determine control equipment. Each affected company must determine
413 what controls meet the better than BART criteria of the state regulators and best
414 fits company needs. The five-factor analysis process set forth in Appendix Y is
415 for determining BART under Section 308. As noted above, both Utah and
416 Wyoming used Appendix Y BART procedures and guidance simply as a yard
417 stick to demonstrate to EPA that their program was better than BART. Utah used
418 the presumptive BART levels and Wyoming used the five-factor analysis. Once
419 the company made a showing that their proposed controls were better than BART,

420 each state accepted the proposal by approving permits to install the better than
421 BART compliant controls. PacifiCorp was and will continue to be required to
422 meet a number of regulatory requirements for regional haze. Therefore, it is not
423 accurate to assert that PacifiCorp's controls included in this rate case were either
424 voluntary or exceeded regulatory requirements in terms of rigor or timing.

425 **Q. Beyond using the incorrect regulation to analyze the projects, are there any**
426 **other flaws in Mr. Gebhart's testimony?**

427 A. Yes. The values for both cost and tons reduced used to calculate what he calls
428 "cost effective" are faulty.

429 **Q. How are Mr. Gebhart's numbers faulty?**

430 A. I believe Mr. Teply will address actual cost effectiveness information more fully,
431 but Mr. Gebhart's cost data is simply too high. In addition, the values he uses for
432 tons reduced, particularly for the Utah projects are also faulty, being drastically
433 low. Mr. Gebhart takes the tons reduced from Table 6 of the 2008 Utah regional
434 haze SIP. That data was provided by the WRAP Regional Modeling Center and
435 were never intended as a basis for a cost analysis. Further, the estimates were
436 developed years ago without consideration for real control equipment
437 specifications. Just like the assumed control rates in the WRAP tables that appear
438 in UAE Exhibit RR 2.4, these data do not reflect actual regulatory requirements or
439 alternative better than BART levels. The actual tons reduced for each project must
440 be used. As already discussed, there were several reasons for improved scrubbers
441 (coal quality, haze rules, etc.). When all these factors are included, the SO₂
442 reductions are several fold greater than what Mr. Gebhart suggests.

443 **Q. Is Mr. Gebhart's use of the WRAP Clearinghouse data current and**
444 **accurate?**

445 A. It was probably fine in December 2009, but many BART decisions have been
446 made since that time so it is certainly not current.

447 **Q. Who determines what a cost effective pollution control project is and is**
448 **\$2,000 a bright line the Commission should accept?**

449 A. Environmental regulators make the decision on cost effectiveness. In this case the
450 question on the actual regulatory decision is moot anyway for all the reasons
451 presented concerning the Utah and Wyoming better than BART demonstrations.
452 Presumptive BART and the five-factor analysis were simply used as yard sticks to
453 measure PacifiCorp's proposed projects against BART, not to determine the
454 technology required based on a cost test.

455 Mr. Gebhart's \$2,000 per ton criteria may be portrayed as "based on
456 BART guidelines" in Appendix Y, but it is an erroneous value. As he himself
457 points out, those costs are for *uncontrolled* units; all of the units being challenged
458 already have some level of SO₂ controls. As a result, the marginal or incremental
459 cost of reducing a ton of SO₂ will be greater.

460 However, EPA has made it clear that existing SO₂ controls should not
461 limit consideration of further control, even if costly. The preamble to Appendix Y
462 states that EPA did not establish presumptive cost limits for units with existing
463 controls which is exactly what Mr. Gebhart is trying to do for PacifiCorp's
464 projects.

465 EPA goes on to say that scrubbers with less than 50 percent removal

466 should be totally replaced with state of the art equipment. Such a project would
467 undoubtedly exceed Mr. Gebhart's "cost effectiveness limit" by a wide margin,
468 even though expressly called for by the EPA.

469 In addition to the higher marginal costs, all of these PacifiCorp units must
470 employ technology better than BART so it can be expected to be even more
471 costly. Finally, Dan Olson, former Director of the Wyoming Division of Air
472 Quality during the time the Section 309 program was developed, was fond of
473 saying that "BART is not a number; it is a process." He observed the same for
474 BART. Mr. Gebhart's "number" is purported as a reasonable "standard," but it is
475 just a number and totally fails to recognize the process that is actually in play for
476 deciding SO₂ control technology for 309 sources.

477 **Q. Why did Wyoming do a five-factor BART analysis and not presumptive**
478 **BART for determining better than BART for PacifiCorp plants?**

479 A. A: For 309 SO₂ sources, Wyoming only used the five-factor analysis to measure
480 better than BART. Wyoming used a five-factor analysis for NO_x and PM
481 emissions at all its sources subject to BART. It made sense for Wyoming to use
482 the five-factor analysis for the 309 better than BART test since they planned to
483 use it for the other two pollutants anyway. Using two methods would have been
484 confusing for industry and the public.

485 **Q. Why didn't Utah require five-factor analysis for Hunter and Huntington?**

486 A. As discussed earlier, all of Utah's Class I areas are covered by Section 309 so a
487 simpler and more certain test was presumptive BART. The regulations do not
488 require a five-factor analysis for 309 nor did UDEQ consider it appropriate for the

489 reasons also previously stated. Again, this was Utah's choice.

490 **Q. Mr. Gebhart criticized a number of the specific projects. Let's start with**
491 **Hunter #2. Are the tons reduced data in Table 6 on pg 25 of the 2008 Utah**
492 **Regional Haze SIP valid for the purpose of a cost analysis for Hunter 2 and**
493 **the other Utah units?**

494 A. No, for the reasons stated earlier. The data are out of date, were not developed for
495 that purpose, and do not reflect the reality of the project. Mr. Gebhart understates
496 the actual pollutants removed and overstates costs to remove pollutants. I believe
497 Mr. Teply's testimony will address the actual cost summaries.

498 **Q. Are the tables referenced in UAE Exhibit RR 2.4 current and appropriate**
499 **for the use intended by Mr. Gebhart's direct testimony on page 35?**

500 A. No. Mr. Gebhart did not share the specific source for these tables, but they appear
501 to be information from the late 1990s used by the WRAP Market Trading Forum
502 to develop the SO₂ Milestone Program. Once again Mr. Gebhart is using
503 extremely dated material in a way it was never intended even when it was current.
504 Each table carries clear caveats with two footnotes that obviously anticipated that
505 states would make decisions different from those in the tables:

506 "These estimates are only valid as part of the regional estimate and
507 are not intended to establish BART estimates for individual
508 sources." [emphasis added]

509 "The application of regional achievable control technology
510 estimates to individual sources has only undergone preliminary
511 review by the states. There may be changes due to a more detailed
512 review." [emphasis added]

513 Hence, the tables were intended strictly as a demonstration of the
514 feasibility of achieving the necessary reductions for the milestones proposed in

515 the Annex and that the milestones were better than BART and were expressly not
516 intended to be used as Mr. Gebhart is doing. Mr. Gebhart's method would be like
517 using a 1958 Chevy repair manual to troubleshoot a 2011 Corvette. A lot of wires
518 get crossed. To my knowledge, neither Utah nor Wyoming used this information
519 in their 309 SIP decisions or PacifiCorp emission limits.

520 **Q. Does the Hunter #2 scrubber project go “substantially beyond the applicable**
521 **regulatory requirements” and would the UDEQ have allowed a five-factor**
522 **analysis for SO₂ as Mr. Gebhart suggests?**

523 A. No on both counts. PacifiCorp had to propose scrubber improvements that were
524 clearly better than BART as part of the Utah 309 milestone program and ensure
525 adequate allowances for a possible cap and trade program. UDEQ was strongly
526 opposed to using the five-factor analysis for reasons already discussed so
527 PacifiCorp did not have the option to use Appendix Y procedures for SO₂. Using
528 Appendix Y is not a matter of “following the normal industry practice.” It is a
529 decision made by the air quality regulator. Only three states are using 309 and
530 none used Appendix Y to dictate SO₂ controls since they are subject to the
531 milestone program. Wyoming only used the Appendix Y for SO₂ as a yardstick
532 for better than BART, not to determine SO₂ BART of 309 Class I areas.

533 **Q. Were PacifiCorp's SO₂ emissions controls for Hunter 2 voluntary?**

534 A. No. PacifiCorp was obligated to propose controls for emissions limits that were
535 better than BART in the 2008 SIP revision. The only “voluntary” aspect was the
536 exact nature of controls and exact timing of implementation, although the
537 Company had mandatory parameters to meet for both of those criteria as well.

538 Doing nothing was not an option. The Company's actions were prudent and likely
539 reduced costs for customers in the long run by avoiding fines, litigation, and
540 higher priced labor and materials, and the like. They were also absolutely needed
541 to allow these existing plants to continue operating.

542 **Q. Rather than repeat all these questions for Hunter 1 and Huntington 1 and 2,**
543 **does Mr. Gebhart's analyses for those units suffer the same flaws as his**
544 **analysis of Hunter 2?**

545 A. Yes. The exact costs and tons of SO₂ removed vary by unit, but the magnitude of
546 the differences from Mr. Gebhart's numbers is similar.

547 **Q. Does Mr. Gebhart accurately portray the WDEQ BART SO₂ analysis for**
548 **Basin Electric's Laramie River Plant compared to Hunter and Huntington?**

549 A. No. His cost analysis for all the Utah units is totally flawed and cannot be the
550 basis for any valid comparison.

551 Fisher – Sierra Club

552 **Q. Have you reviewed the testimony submitted by Dr. Fisher in this case?**

553 A. Yes.

554 **Q. Do you have any concerns with the testimony Dr. Fisher filed?**

555 A. Yes. The main concern I have is how he describes the state-federal regulatory
556 relationship and how industry should handle multiple regulatory requirements
557 occurring on different timelines, some of which may not be very certain in their
558 outcome.

559 **Q. Do you think Dr. Fisher’s Exhibit SC-4, the World Resources Institute Fact**
560 **Sheet, and Dr. Fisher’s assertions about it fairly portray regulatory reality?**

561 A. No. While it is true that a number of the regulatory programs have been on the
562 books for some time, the specific requirements when they are updated or
563 proposed are not always known far in advance. For example, the National
564 Ambient Air Quality Standards (NAAQS) are supposed to be considered every
565 five years for update, but EPA is often behind schedule or gets litigated and they
566 may or may not be made more stringent. Also, the Utility MACT grows from a
567 requirement in the 1990 Clean Air Act, but the current proposal is EPA’s third
568 attempt to meet the Act’s mandate and this version is very different than the
569 others. The utility sector warrants strong environmental regulation, but the
570 original Edison Electric Institute chart simply shows that the utility sector has a
571 lot of environmental regulations coming in a fairly compressed time frame (a
572 window of a few years) and suggests that perhaps we don’t have the most
573 efficient regulatory framework.

574 **Q. Is there a BART requirement for SO₂ at facilities covered by Section 309**
575 **SIPs as Dr. Fisher suggests on pages 25 and 26 of his testimony?**

576 A. No, both Utah and Wyoming have 309 SIPs that use milestones and a backstop
577 trading program to reduce SO₂ emissions. Unit specific emission limits are
578 required to demonstrate better than BART performance beginning with the 2008
579 SIPs.

580 **Q. When do PacifiCorp’s BART-eligible SO₂ sources in Utah and Wyoming**
581 **have to comply with SIPs and other state rules?**

582 A. The SIPs are enforceable as soon as they are approved by the state air quality
583 regulatory authority and the rulemaking procedural requirements are met. In Utah
584 that would be the Air Quality Board and the SIP is enforceable under Utah law
585 once published in the state rules bulletin. Permits (Approval Orders and Operating
586 Permits) are enforceable when the Executive Secretary of the Air Quality Board
587 signs them. The same person also serves in the capacity of Director of the
588 Division of Air Quality. Accordingly, PacifiCorp *must* install controls in
589 accordance with the updated schedule in the April 2011 regional haze SIP and
590 their Approval Orders.

591 **Q. Can the state of Utah take enforcement action after a SIP is approved in**
592 **Utah, but before it is approved by EPA?**

593 A. Absolutely. In fact, it is not unusual for an EPA Regional Office to take years to
594 approve a SIP. This is so common that it has a name: “SIP gap” meaning the gap
595 between state and federal rules and enforceability.

596 **Q. Does Utah wait for EPA approval before implementing a SIP?**

597 A. Absolutely not. If we did, public health would suffer while EPA went through the
598 many procedural and legal steps it takes to approve a SIP.

599 **Q. Does Utah have to wait for EPA to approve its permits?**

600 A. No, most of our permitting rules are federally enforceable so any permit Utah
601 issues can also be enforced by EPA. The federal government can fine violators up
602 to \$37,500 per day per violation plus injunctive relief which can be even more

603 costly than fines.

604 **Q. When did PacifiCorp have to comply with Utah’s Section 309 SIP?**

605 A. The Utah Air Quality Board approved the first regional haze SIP in December
606 2003. So it was binding on the state and companies regulated by the state at that
607 time. The 2008 SIP contained enforceable emission limits for both Hunter and
608 Huntington to comply with federal rules. Actual project dates are in the future in
609 some cases.

610 **Q. On page 26 of his testimony, Dr. Fisher states that “Utah DEQ found that the
611 planned installations and upgrades of controls at PacifiCorp’s Hunter and
612 Huntington units satisfied BART requirements.” Is that accurate?**

613 A. No. The controls for those facilities have to be better than BART so the state can
614 demonstrate that its SIP provides greater reasonable progress than source-by-
615 source BART in achieving visibility goals. The controls also must ensure current
616 and ongoing compliance with the SO₂ milestones.

617 **Q. Dr. Fisher suggests at the top of page 27 that PacifiCorp should have waited
618 until EPA approved state rules before investing in capital projects. Should
619 PacifiCorp have waited until EPA approves the state regional haze SIP?**

620 A. No. Such an action would put the Company at risk of being subject to a \$10,000
621 fine per day for each violation of state rules. As I indicated, EPA approval can
622 take years. So if PacifiCorp had failed to propose better than BART controls for
623 the 2008 SIP, they could conceivably been subject to almost \$44 million in fines.
624 Moreover, that is just in Utah; the financial exposure in Wyoming potentially
625 could be double that given the greater number of facilities there. Again, doing

626 nothing was not an option, and Dr. Fisher is simply mistaken to suggest it was.

627 **Q. How is an air permit justification for requesting an economic recovery in a**
628 **rate case?**

629 A. Air permits reflect underlying applicable regulatory requirements for a given
630 facility to construct and operate. For both Utah and Wyoming, the permits for
631 PacifiCorp BART-eligible sources under 309 make the SO₂ controls necessary for
632 milestone success enforceable. For 309 SIPs, BART-eligible sources had to
633 propose measures that were better than BART and would ensure compliance with
634 the SO₂ milestones. Once the air agency determined a proposal met that
635 requirement and was better than BART, the company had to submit an application
636 for a permit so that the controls would be installed. In addition, EPA has required
637 that PacifiCorp's BART-eligible sources have enforceable emissions limits.

638 So it is technically the underlying requirements in state and federal rules
639 that are implemented via permits that are the justification for economic recovery
640 in proceedings such as this. PacifiCorp's permits are prudent and necessary to
641 provide safe adequate and reliable power since they comply with state and federal
642 law.

643 **Q. Dr. Fisher opined that PacifiCorp's compliance actions would not be**
644 **sufficient to meet "final" regional haze rules. Do you agree?**

645 A. No. First, he is completely wrong about his understanding of "final regional haze
646 rules." As I described earlier in this testimony, state rules are enforceable shortly
647 after they are approved and companies are obligated to comply under threat of
648 substantial penalty. To suggest otherwise demonstrates a fundamental lack of

649 understanding of air quality management in the United States.

650 Second, new source review permits in Wyoming and Utah are issued by
651 the state air quality agencies, not EPA. The National Park Service did comment
652 that it felt Selective Catalytic Reduction (SCR) was required at PacifiCorp plants
653 in Wyoming as BART to reduce NO_x but states do have the latitude in BART
654 guidance to require different solutions than presumptive BART. Nor can EPA
655 compel the state to change a permit except under extraordinary circumstances.

656 Therefore, to characterize the controls that have been permitted by
657 PacifiCorp as “probably not” meeting “final Regional Haze rules” is simply not
658 accurate.

659 **Q. What about Dr. Fisher’s speculation about SCRs needed for ozone**
660 **attainment by 2016?**

661 A. Ozone precursors throughout the west must be reduced if the ozone NAAQS is
662 tightened. Exactly what will be required where at this point is definitely unknown
663 and it would be irresponsible to act based on this level of uncertainty.

664 **Q. What about Dr. Fisher’s speculation about what PacifiCorp should do about**
665 **the “proposed” NAAQS?**

666 A. It is an interesting concern given Dr. Fisher’s earlier testimony exhorting the
667 company to wait until the very last minute to do anything. There is a great deal of
668 uncertainty and risk in the evolving NAAQS; especially the short term SO₂ and
669 NO₂ standards and future updates to the secondary standards. One thing is certain;
670 the NAAQS will continue to become more stringent. The current round of
671 projects, while not required by the most recent NAAQS, will provide co-benefits

672 that are directionally correct for future compliance and risk reduction. None of
673 these projects would have to be ripped out based on any future requirements I am
674 aware of.

675 Steinhurst – Sierra Club

676 **Q. Have you reviewed Dr. Steinhurst’s testimony in this case?**

677 A. Yes, I have.

678 **Q. What was your reaction to Dr. Steinhurst’s testimony?**

679 A. Yes. As with Dr. Fisher, Dr. Steinhurst did not appear to grasp how the air quality
680 regulatory system works in practice and he was not realistic in his approach to
681 managing a dynamic regulatory environment.

682 **Q. Dr. Steinhurst suggests that PacifiCorp’s projects cannot be “used and
683 useful” because EPA has not yet finalized a regional haze rule under the
684 Clean Air Act. Is that true?**

685 A. No. As with Dr. Fisher, Dr. Steinhurst does not appear to have a complete
686 understanding of the Clean Air Act or regional haze rules. As I and other
687 interveners have testified, EPA first promulgated the regional haze rules (40 CFR
688 Part 51 Sections 308 and 309) in 1999. There have been several revisions since
689 that time with the most recent being finalized on October 13, 2006. The assertion
690 that EPA has not finalized a regional haze rule is simply not true.

691 It is possible that Dr. Steinhurst is referring to EPA approval of state
692 regional haze SIPs. As explained earlier, this is an entirely different process than
693 the regional haze rule. Once again, a state SIP is enforceable under state law once
694 approved by the state air agency and is binding on regulated entities at that time.

695 The course of action recommended by Dr. Steinhurst would require PacifiCorp to
696 be in violation of both the Utah and Wyoming 309 regional haze SIPs and risk
697 serious financial sanctions.

698 It is true that there is always a possibility that EPA could disapprove part
699 or all of a state SIP. That is the exception and the Utah Division of Air Quality
700 has been working diligently for several years to address EPA Region VIII's
701 questions concerning the regional haze SIP. Again, regulated sources do not have
702 the option to wait until final action by EPA on a SIP; they must obey the state SIP
703 rules immediately upon publication.

704 It is hard to comprehend how something is not "used and useful" if it is
705 required to comply with state and federal environmental laws since at least 2008.

706 **Q. Would you agree with Dr. Steinhurst's opinion that "...Rocky Mountain**
707 **Power would be forced to either reinvest in different or additional**
708 **technology, which could render the currently proposed investments**
709 **redundant or obsolete, or to decommission plants entirely; in which case the**
710 **ratepayer funded investments would be abandoned."?**

711 A. No, I do not. First of all, the practice of incremental improvements in pollution
712 controls as new regulations occur has been the normal course throughout all
713 industrial sectors since the first Clean Air Act 40 years ago. Section 309 for
714 regional haze is different in that industry was allowed to select technical solutions
715 (that met certain parameters) rather than the state or EPA prescribe exactly what
716 had to be installed. Having to upgrade or install additional equipment for future
717 requirements is exactly what I would expect. The particular projects in this case

718 represent appropriate regulatory choices for regional haze and the Utah mercury
719 rule. EPA has set SCRs as presumptive BART for NO_x so they may be required
720 on some units that operate into the future. In any case, the claim that these
721 controls could be “redundant or obsolete” is nonsense.

722 Finally, I am a strong proponent of clean energy actions that reduce
723 carbon and other pollutants. However, in the absence of robust and immediate
724 clean energy on a large scale, we cannot abandon coal-fired generation and I can't
725 imagine that this Commission has that in mind as even possibly being in the best
726 interests of Utah ratepayers. In the meantime, we must invest wisely to make sure
727 these plants are as clean as possible. That is what this suite of projects do; protect
728 health and improve visibility. This is a risk reduction set of projects, not the other
729 way around as suggested. To delay or stop this work is injurious to human health;
730 I can't believe that representatives of the Sierra Club would stand in the way of
731 that objective.

732 **Q. Dr. Steinhurst states that “the Current Case Retrofit costs have not been**
733 **shown to be necessary or least cost for the provision of utility service over the**
734 **long term.” Would you agree?**

735 A. No. These projects are required by state and federal regional haze rules and
736 whatever EPA does, it will not be less stringent. My earlier testimony
737 demonstrates the reasonable cost of the projects. The projects are required now.
738 Since they are required now it makes no sense to say they haven't been shown to
739 be cost effective in the future.

740 **Q. What is your opinion about Dr. Steinhurst's claims about PacifiCorp not**
741 **dealing with the cumulative effect of environmental regulations?**

742 A. I don't find it very realistic. First, industries with large or toxic air emissions
743 understandably face myriad requirements under separate parts of the Clean Air
744 Act. These rules arrive during different time frames and are rarely harmonized;
745 sometimes they even conflict. Second, the more complicated and controversial
746 rules are litigated, sometimes for years. The more responsible companies track
747 and comply with each as they become enforceable or a course of action becomes
748 more obvious. The best environmental performers that I have worked with are
749 constructively involved during rule development (federal, state or both) and
750 communicate regularly with their regulators to find the most efficient and
751 economic way to comply. My experience with PacifiCorp has been that they are
752 very proactive and constructive in planning for future air quality requirements.
753 During my years as Air Director and Executive Director of the Department, I and
754 my Wyoming counterparts met regularly with company officials to explore ways
755 for them to address not only regional haze, but also mercury and even carbon
756 emissions. The Company will have to address any issues with respect to
757 Integrated Resource Planning and other processes pertaining to utility regulation,
758 but my experience was that they were very focused on the full range of air quality
759 now and well into the future. We didn't always agree, for sure, but they spent a lot
760 of time planning the best course of action.

761 **Q. Dr. Steinhurst suggests that PacifiCorp has used a piecemeal program that**
762 **will only satisfy current requirements and should wait for EPA’s renewed**
763 **multipollutant initiative. Is this a valid criticism of the Company?**

764 A. No. Based on my experience as related above, PacifiCorp is doing the right things
765 because it does not have the option to wait as implied by Dr. Steinhurst. The
766 reality is that regulations do come piecemeal and any company must comply
767 whether it likes it or not. So Dr. Steinhurst’s recommendation is not realistic.

768 Regarding EPA Administrator Lisa Jackson’s recent call for a more multi-
769 pollutant sector-based approach to air quality regulation, I was an invited guest
770 the day she gave that speech in Washington, DC marking the 40th Anniversary of
771 the Clean Air Act on September 14 of last year. Like many others, I welcome this
772 move. Currently the Clean Air Act Advisory Committee is working on proposals
773 for Gina McCarthy, EPA Assistant Administer for Air and Radiation, to consider.
774 The Commission should know that the multi-pollutant discussion has been on-
775 going for years. It is an excellent concept, but has proven difficult to implement
776 due to legal barriers or other obstacles. Ironically, PacifiCorp’s CAI that has been
777 criticized by some was very focused on multi-pollutant projects and efficient
778 implementation. It may be “dusty” now, but it was quite forward looking at the
779 time.

780 The Company’s investments have been consistent with (and not less than
781 or beyond) what has been required of it by state and federal regulations. In that
782 regard it is wrong, in my opinion, to claim this is a “piecemeal” approach.

783 **Conclusion**

784 **Q. Could you please summarize your testimony?**

785 A. There are four major intervenor concerns about PacifiCorp's environmental
786 control projects that I addressed:

- 787 1) why the projects were required by environmental regulations,
- 788 2) why the projects did not go beyond regulatory requirements and
789 were not premature,
- 790 3) why the costs for the projects are reasonable, and
- 791 4) what additional air quality regulations the projects address other
792 than regional haze.

793 I will now summarize my position on each of these issues.

794 1) The Projects Were Required: Interveners claim that PacifiCorp
795 was under no regulatory obligation to submit SO₂ emission control permit
796 applications. I have shown that PacifiCorp was required by federal rule to obtain
797 permits with enforceable limits that achieve the SO₂ milestones. The permit
798 applications provided the necessary better than BART technology so they did not
799 step beyond the required regulation. Finally, the applications were timely to allow
800 an orderly installation of projects to ensure compliance with the SO₂ milestones
801 and Utah mercury rule. In short, PacifiCorp initiated projects with appropriate
802 scope and timing to avoid possible enforcement action. Their actions were
803 prudent, used, and useful.

804 2) The Projects Were Within Regulations And Not Premature: First,
805 PacifiCorp's emission controls had to be better than BART to demonstrate greater

806 reasonable progress. Second, a five-factor BART analysis is specifically NOT
807 required for SO₂ milestones sources so the associated cost test cannot be used to
808 justify less stringent technology. Finally, the Company needed to ensure an
809 adequate margin for compliance with the new 2008 emission limits.

810 3) The Costs for the Projects Are Reasonable: Emission controls had
811 to be better than BART to demonstrate greater reasonable visibility progress.
812 Given this higher technology hurdle and the fact that partially controlled sources
813 have a higher marginal cost per ton to reduce SO₂, costs will be greater compared
814 to uncontrolled sources that only install BART. Furthermore, cost was not a direct
815 criterion in setting the emission limits. Both Utah and Wyoming used BART
816 guidance only to set the better than BART bar, not to diminish controls on the
817 basis of cost. In addition, the Company needed to ensure an adequate margin for
818 compliance with the new emission limits so the least cost controls may not be
819 prudent. Finally, regulations preclude PacifiCorp from cutting emissions at plants
820 that might be less expensive if it means less improvement in visibility.

821 4) Additional Air Quality Regulations: PacifiCorp must comply with
822 the Utah mercury emissions limit at all Hunter and Huntington units by December
823 31, 2012. In addition, the federal Utility MACT will be finalized in November. It
824 faces extensive litigation, but all these projects will position the company well for
825 future compliance.

826 Given the many air quality regulations that exist, that are in development,
827 or that are contemplated for the utility industry; there is no perfect time to proceed
828 with projects since rules continue to become ever more stringent and are not

829 always certain. A prudent compliance program is a fine balance of the known, the
830 expected, and what might be. PacifiCorp has been prudent and done, in my
831 opinion, a reasonable job attempting to balance all these complex considerations.

832 **Q. Does that conclude your rebuttal testimony?**

833 A. Yes.