

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UE 246

In the Matter of)	
)	CUB’S LIST OF EXHIBITS TO BE
PACIFICORP, dba PACIFIC POWER)	ENTERED INTO THE RECORD
Request for a General Rate Revision)	
_____)	

CUB Pre-Filed Exhibits in UE 246

CUB 100 series

Exhibit CUB/100	Response Testimony of the Citizens’ Utility Board of Oregon
Exhibit CUB/101	Witness Qualification Statement
Exhibit CUB/102	MEHC 2010 Fixed Income Investor Conference Presentation
Exhibit CUB/103	CUB Data Request 11 to PacifiCorp
Exhibit CUB/104	CUB Data Request 4 and 7 to PacifiCorp
Exhibit CUB/105	2011 Integrated Resource Plan Update (Confidential Version)
Exhibit CUB/106	Natural Gas update Summer 2012
Exhibit CUB/107	Jim Bridger 3 PacifiCorp’s PVR(d) Study “CY 2008 Thermal Operations Economic Decision Model 2008 (Q4) (Stand Alone Mode)”
Exhibit CUB/108	Sixth Northwest Conservation and Electric Power Plan Chapter 2
Exhibit CUB/109	Naughton Units 1 and 2 PacifiCorp’s PVR(d) Study “CY 2009 Thermal Operations Economic Decision Model 2009 (Q1) (Stand Alone Mode)”
Exhibit CUB/110	System Optimizer – 2011 IRP Update Coal Replacement Study
Exhibit CUB/111	CUB Data Request 20 to PacifiCorp

UE 246 –CUB’S LIST OF EXHIBITS TO BE ENTERED INTO THE RECORD

Exhibit CUB/112	Dave Johnston 4 PacifiCorp's PVRR(d) Study "CY 2007 Thermal Operations Economic Decision Model 2007 (Q3) (Stand Alone Mode)"
Exhibit CUB/113	Hunter Units 1 and 2 PacifiCorp's PVRR(d) Study "CY 2009 Thermal Operations Economic Decision Model 2009 (Q3) with Bonus Depreciation(Stand Alone Mode)"
Exhibit CUB/114	Wyodak Unit 1 PacifiCorp's PVRR(d) Study "CY 2009 Thermal Operations Economic Decision Model 2009 (Q2) (Stand Alone Mode)"

CUB 200 Series

Exhibit CUB/200	Rebuttal Testimony of the Citizens' Utility Board of Oregon
Exhibit CUB/201	CUB Data Request 7 to PUC Staff
Exhibit CUB/202	CUB Data Request 8 to PUC Staff
Exhibit CUB/203	CUB Data Request 2 to PUC Staff
Exhibit CUB/204	CUB Data Request 9 to PUC Staff
Exhibit CUB/205	CUB Data Request 11 to PUC Staff
Exhibit CUB/206	PGE's "Preliminary Comments on Proposed Regional Haze Rules" submitted to ODEQ December 17, 2008
Exhibit CUB/207	CUB Comments on Proposed Regional Haze Rules submitted to ODEQ January 30, 2009
Exhibit CUB/208	PGE's "Decision Points Proposal for BART"
Exhibit CUB/209	PGE's "Boardman: Recent regulatory History"
Exhibit CUB/210	"Oklahoma, EPA, and PSO reach Agreement on Air Quality Rules" dated April 24, 2012/"PSO, State Reach Agreement With EPA On Emissions Reduction Plans" dated April 24, 2012
Exhibit CUB/211	CUB's August 2012 rebuttal Model Run of "PacifiCorp Thermal Model" (Naughton 1 and 2)
Exhibit CUB/212	"PacifiCorp Flue Gas Desulfurization System Naughton Units 1 and 2 Contract No. 3000060094"

UE 246 –CUB'S LIST OF EXHIBITS TO BE ENTERED INTO THE RECORD

CUB Additional Exhibits to Offer into the Record

Exhibit No.	Witness	Party	Document Reference Information	No. of pages
CUB/300	Jenks	CUB	Supplementing CUB/Exhibit 210 – September 26, 2012 Public Service Company of Oklahoma Press Release https://www.psoklahoma.com/info/news/view_release.aspx?releaseID=1309	1
CUB/301	Jenks	CUB	Project Proposal for Unit 1 Implementaion – Naughton Units 1 and 2 Flue Gas Desulphurization (FGD) System. Data Response Sierra 110 Confidential APR - 10003745 WBS-SNAU2008 CCO4 Confidential.pdf	11
CUB/302	Jenks	CUB	APR-10010143 WBS-SNAU 2008 CC05 CONFIDENTIAL – PDF CONCRETE CHIMNEY – NAUGHTON UNITS 1 AND 2 FLUE GAS DESULPHURIZATION (FGD) SYSTEM October 23, 2008 Sierra Club 110 CONFIDENTIAL	11
CUB/303	Jenks	CUB	Response to Sierra Club DR 3.4 - Attachment - Comments April 29, 2009 PacifiCorp Comments on Naughton Construction Permit AP5156 2009-04-29- Nau AP 5156 Comment Letter.pdf	8
CUB/304	Jenks	CUB	Prepared Comments of Micheal Dunn, President and CEO, PacifiCorp Energy Wyoming Regional Haze Hearings – June 26 and 28, 2012—Response to Sierra Club DR 3.7, Comments of Micheal Dunn	7
CUB/305	Jenks	CUB	Response to Sierra Club DR 2.1	1
CUB/306	Jenks	CUB	Email requesting Naughton construction permit by March or April 2009. Response to Sierra Club CR 1.12 - Sierra Club 1.12/Naughton.zip/RE Wyodak and Naughton (1).msg	1
CUB/307	Jenks	CUB	IRP Supplemental Coal Replacement Study 9/21/2011 - Confidential Attachment to CUB DR 6	22
CUB/308	Jenks	CUB	CUB Confidential Comments LC 48, November 3 2011	14
CUB/309	Jenks	CUB	BART Appeals Settlement Agreement Attachment OPUC 269	17
CUB/310	Jenks	CUB	Workpaper to Chad Teply Testimony – OR GRC 2012 CAI CAPITAL PROJECTS STUDY FOR NAUGHTON UNITS 1 & 2 – Feb. 2009 CONFWorkpaper –Nau1&2 – Feb 2009 Coal Study.doc	2
CUB/311	Jenks	CUB	Confidential Response to CUB Data Request 42	8

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CUB/312	Jenks	CUB	2 nd Supplement Response to CUB DR 44	1
CUB/313	Jenks	CUB	Response to Staff DR 343	1
CUB/314	Jenks	CUB	Response to Sierra Club DR 1.30	2
CUB/315	Jenks	CUB	Confidential Response to CUB DR 39 – Attachment 3, 1 st Supplemental Response	7
CUB/316	Jenks	CUB	Confidential Response to CUB DR 39 – Attachment 4, 1 st Supplemental Response	8

CUB Cross Examination Exhibits

Exhibit No.	Witness	Party	Document Reference Information
CUB 400	Teply	PacifiCorp	UE 246 PAC Exhibit 502

Dated this 9th day of October, 2012.

Respectfully submitted,



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UE 246 –CUB'S LIST OF EXHIBITS TO BE ENTERED INTO THE RECORD

UE 246 – CERTIFICATE OF SERVICE

I hereby certify that, on this 9th day of October, 2012, I served the foregoing **CUB’S LIST OF EXHIBITS TO BE ENTERED INTO THE RECORD** in docket UE 246 upon each party listed in the UE 246 PUC Service List by email and, where paper service is not waived, by U.S. mail, postage prepaid, and upon the Commission by email and by sending one original and one copy by U.S. mail, postage prepaid, to the Commission’s Salem offices.

(W denotes waiver of paper service)

(C denotes service of Confidential material authorized)

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Respectfully submitted,

A handwritten signature in black ink, appearing to read "Sommer Templet". The signature is fluid and cursive, with the first name "Sommer" being more prominent than the last name "Templet".

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<https://www.psoklahoma.com/info/news/ViewRelease.aspx?releaseID=1309>

9/26/2012

PSO FILES ENVIRONMENTAL COMPLIANCE PLAN WITH OCC

Public Service Company of Oklahoma (PSO) today filed with the Oklahoma Corporation Commission (OCC) testimony in support of its Environmental Compliance Plan for meeting new, final EPA rules affecting power plant emissions and for recovery of new purchased power costs, which are part of the plan. The plan includes an agreement in principle announced in April 2012 by PSO, the State of Oklahoma, the U.S. Environmental Protection Agency and the Sierra Club.

The overall compliance plan addresses the EPA's Regional Haze Rule (RHR) and Mercury and Air Toxics Standard (MATS), the two most significant environmental compliance regulations facing PSO.

Four of PSO's natural gas-fired generators affected by the new rules must comply with the RHR for nitrogen oxide (NOx) emissions. This will be accomplished by installing special combustion technology to reduce NOx emissions.

Meanwhile, PSO's coal-fired Northeastern Station (NES) Units 3&4 are subject to the RHR for nitrogen oxide emission rates and sulfur dioxide (SO2) emission rates. Under MATS, the units are subject to emission rates for mercury and other hazardous air pollutants.

As part of the plan, PSO will close NES 4 in early 2016. Meanwhile, it will install new emissions control equipment on NES 3, modify some existing equipment, increase the use of ultra-low sulfur coal, and eventually lower the unit's operating limits. PSO will operate NES 3 until it is retired at the end of 2026.

Key elements of the filing seek OCC approval for: 1) PSO's plan for complying with new EPA rules, 2) cost recovery for new purchased power beginning in 2016, 3) earnings on the power purchase agreement, and 4) new depreciation rates for NES 3&4.

Today's filing does not ask any new costs be put into rates at this time.

PSO, a unit of American Electric Power (NYSE: AEP), is an electric utility company serving more than 530,000 customers in eastern and southwestern Oklahoma. With headquarters in Tulsa, PSO has 4,321 megawatts of generating capacity and provides electricity to 230 cities and towns across a service area encompassing 30,000 square miles. News releases and other information about PSO can be found on the World Wide Web at PSOklahoma.com.

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April 29, 2009

Mr. Chad Schlichtemeier
NSR Program Supervisor
Wyoming Air Quality Division
122 West 25th Street
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Cheyenne, Wyoming 82002

Re: Comments on Naughton Construction Permit AP-5156

Dear Mr. Schlichtemeier:

PacifiCorp is providing this letter to address certain comments provided to the Wyoming Division of Air Quality by EPA Region 8 pertaining to draft construction permit AP-5156 for planned equipment and pollution control projects at the Naughton power plant.

NSPS and Case-by-Case MACT Applicability (Region 8 comment I)

The planned Naughton projects will not increase the heat input rates to any of the three facility boilers or increase the emission rate of any regulated pollutants and therefore do not constitute an NSPS modification under 40 CFR 60.14; therefore, the NSPS are not triggered as a result of the proposed projects.

Additionally, the Naughton projects do not qualify as a reconstruction. 40 CFR 63.41 defines major source reconstruction to take place if "*the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable process or production unit*". The planned Naughton projects are estimated to have a fixed capital cost equivalent to approximately 10 percent of the fixed costs required to construct comparable electric generating units. As such the proposed Naughton projects do not meet the definition of a major reconstruction and are not subject to the MACT applicability requirements identified in 40 CFR Part 63.

Sulfuric Acid Mist: Technical Feasibility of H₂SO₄ Control Options (Region 8 Comment II.2.A)

Among other things such as coal sulfur content, the H₂SO₄ emission rates from a coal-fired boiler are influenced by the operation of air preheaters, electrostatic precipitators or baghouses, and wet or dry flue gas desulfurization systems. Sulfuric acid mist emissions from Naughton units 1 and 2 are mitigated through the operation of the existing air preheaters and electrostatic precipitators. The following table summarizes the actual baseline annual H₂SO₄ emissions. It also summarizes the POTENTIAL interim emissions prior to completing the pollution control projects as well as the post-project POTENTIAL future emissions.

Chad Schlichtemeier
Comments on Naughton Construction Permit AP-5156
April 29, 2009

Table 1

Unit	Actual Baseline Tons/year	Potential Interim Emissions Tons/year	Potential Interim Increase Tons/year	Future Potential Tons/year	Post-Project Decrease from Baseline Tons/year
1	7.4	11.0	3.6	4.4	3.0
2	9.6	14.3	4.7	5.7	3.9
3	15.0	18.8	3.8	2.4	12.6
Total	32.0	44.1	12.1	12.5	19.5

The potential increase in H₂SO₄ emissions are minimal and no control technologies have been identified in the BACT review that are economically feasible. For this reason PacifiCorp has proposed minimizing the potential H₂SO₄ emissions by controlling the injection rate of SO₃ into the unit 1 and 2 boilers.

In addition, PacifiCorp will be adding scrubbers onto units 1 and 2 in 2012 and 2011, and replacing the unit 3 ESP/SO₃ injection system with a baghouse in 2014. As can be seen from the projected future potential emissions in the table above, these changes will ultimately lead to a significant decrease from today's baseline actual emissions of H₂SO₄.

Sulfuric Acid Mist: Table 2 and 3 Discrepancies (Region 8 Comment II.3)

Table 2 (H₂SO₄ Emissions) of the Division of Air Quality permit application analysis provides the Naughton plant's Baseline, Potential Interim and Future Potential sulfuric acid emission rates. The baseline actual emissions for units 1, 2 and 3 are derived from the maximum past actual coal burn rates and each unit's existing pollution control equipment. The potential interim emissions are based on the maximum future potential coal burn rates and the operation of units 1, 2 and 3 flue gas conditioning systems in conjunction with the current pollution control equipment. The Future Potential H₂SO₄ emissions are based on the maximum future potential coal burn rates, the operation of the units 1 and 2 flue gas conditioning and flue gas desulfurization systems (scrubbers), and the retirement of the unit 3 flue gas conditioning system.

The Table 2: H₂SO₄ Emissions (tpy) included in the Wyoming Division of Air Quality *Permit Application Analysis AP-5156* dated March 9, 2009, contains an error in the unit 3 Future Potential sulfuric acid mist emission rate. As corrected in Table 1 above, the unit 3 Future Potential H₂SO₄ emission rate will decrease to 2.4 tons/year following installation of the fabric filter baghouse and retirement of the unit 3 flue gas conditioning system.

Carbon Monoxide (CO) BACT Limit (Region 8 comment III)

In the Naughton construction permit application PacifiCorp proposed a carbon monoxide emission limit of 0.25 lb/MMBtu for units 1 and 2 on a 30-day rolling average basis following completion of the low-NO_x burner projects. For the permit application, PacifiCorp conducted a

Chad Schlichtemeier
Comments on Naughton Construction Permit AP-5156
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RACT/BACT/LAER Clearinghouse (RBLC) review of CO emission limits for pulverized coal-fired boilers. Our RBLC review indicated that good combustion practices is the technology used to control CO emissions from pulverized coal-fired boilers.

CO emission rates are contingent upon the design and type of boiler; characteristics and quality of the fuel being combusted; mill configuration; boiler tuning; and current operational settings and characteristics of the boiler. For these reasons CO emission rates from a particular boiler are generally unique to that boiler and do not lend themselves to comparison to other boilers of differing firing types, vintage or fuel usage.

PacifiCorp has recently completed LNB upgrades on several tangentially-fired boilers. Aggressive NO_x controls lead to an increase in CO emissions. This aggressive control of NO_x is the sole reason that a CO BACT review is required, and a trade-off must occur between the two pollutants. It is our believe that reducing the CO limit below the proposed 0.25 lb/MMBtu will require a higher NO_x limit than the proposed 0.26 lb/mmBtu rate.

Because of this inverse relationship between NO_x and CO whereby a reduction in NO_x emissions results in an increase in CO emissions, our understanding of current operations, and our experience in boiler NO_x modifications, PacifiCorp believes that the proposed 30-day rolling average CO limitation of 0.25 lb/MMBtu represents best practice for Naughton units 1 and 2 and is a reasonable and appropriate approach to minimizing both NO_x and CO emissions from the facility's unit 1 and unit 2 boilers.

Unit 3 Particulate Matter Emissions Monitor

Currently unit 3 is a wet stack and is exempt from opacity monitoring requirements. However, the unit does have in place a compliance assurance monitoring plan that is used as an indicator that the unit is in continuous compliance with its PM emission limit. Furthermore, periodic stack testing confirms compliance with the PM emission limit. During the public hearing in Kemmerer, Wyoming on April 13, 2009, the Wyoming Division of Air Quality indicated that following the installation of the unit 3 fabric filter baghouse, the installation of a particulate matter emissions monitor on the unit 3 exhaust stack will be required.

PacifiCorp's review of current technology indicates the installation of this analyzer will cost approximately \$500,000. Review of available data regarding particulate matter monitors suggests that with current technology, it is nearly impossible for PM analyzers placed in stacks on units with wet scrubbers and baghouses to pass the required EPA QA/QC tests. We recognize that there is some time before this requirement will go into effect, and technology may improve and costs decrease over the next few years. However, we propose the Division of Air Quality allow PacifiCorp the alternative of either installing the PM CEMS, or installing an opacity monitor in the ductwork ahead of the scrubber. This would provide an alternative in the event that the PM CEMS technology does not develop as the agency anticipates.

Chad Schlichtemeier
Comments on Naughton Construction Permit AP-5156
April 29, 2009

Naughton Unit 1, Unit 2 and Unit 3 Capital and O&M Projects

PacifiCorp has attached the list of planned capital and O&M projects that were included in the original construction permit application for the Naughton facility.

This concludes our response. Please call me at (801) 220-2306 if you have any questions or comments regarding the Naughton construction permit application or our response to the EPA Region 8 comments contained in their letter dated April 10, 2009.

Sincerely,

A handwritten signature in blue ink, appearing to read "Jim Doak", with a stylized, cursive script.

Jim Doak
Lead-Senior Engineer

Chad Schlichtemeier
Comments on Naughton Construction Permit AP-5156
April 29, 2009

Appendix A: Naughton Unit 1 Projects

Year	Unit	Project
2012	1	Major steam turbine overhaul
2012	1	Install low-NO _x control system
2012	1	Upgrade boiler draft system
2012	1	Install flue gas desulfurization system (SO ₂ scrubber)
2012	1	Replace the boiler deflection arch
2012	1	Re-tube the steam condenser
2012	1	Replace bottom ash hopper refractory
2012	1	Install cooling tower motor variable frequency drives
2012	1	Replace the economizer hopper insulation
2012	1	Install forced draft fan variable frequency drive
2012	1	Replace a high pressure feedwater heater
2012	1	Rewind the generator field
2012	1	Replace the generator hydrogen coolers
2012	1	Rewind the electric generator stator
2012	1	Replace hot reheat steam lead piping
2012	1	Replace boiler superheater tubes
2012	1	Install intelligent sootblower control system
2012	1	Install mercury control system
2008	1	Install flue gas conditioning system
2012	1	Install boiler penthouse tube support clips
2012	1	Replace the boiler reheater
2012	1	Replace steam safety valves
2012	1	Rebuild steam control valves
2012	1	Replace boiler water wall tubes
2012	1	Replace air preheater baskets
2012	1	Upgrade the ash handling control system
2008	1	Rebuild coal mills (2)
2009	1	Rebuild coal mill
2010	1	Rebuild coal mill
2012	1	Rebuild coal mill
2013	1	Rebuild coal mill
2012	1	Replace 4160-volt relays

Appendix B: Naughton Unit 2 Projects

Year	Unit	Project
2011	2	Major steam turbine overhaul
2011	2	Install flue gas desulfurization system (SO ₂ scrubber)
2011	2	Install low-NO _x control system
2011	2	Upgrade boiler draft system
2011	2	Replace/rebuild the high pressure turbine nozzle block
2011	2	Rebuild steam control valves
2012	2	Install mercury control system
2011	2	Replace the boiler reheater
2011	2	Replace boiler superheater tubes
2011	2	Rewind the generator field
2011	2	Rewind the electric generator stator
2011	2	Replace boiler water wall tubes
2011	2	Replace generator exciter
2011	2	Rebuild/replace auxiliary transformer
2011	2	Upgrade the ash handling control system
2012	2	Rebuild coal mill
2014	2	Rebuild coal mills (2)
2011	2	Replace 4160-volt relays
2011	2	Replace coal piping
2016	2	Replace cooling tower
2008	2	Install flue gas conditioning system

Chad Schlichtemeier
Comments on Naughton Construction Permit AP-5156
April 29, 2009

Appendix C: Naughton Unit 3 Projects

Year	Unit	Project
2014	3	Install fabric filter baghouse to replace electrostatic precipitator
2014	3	Upgrade the HP, IP and LP sections of the steam turbine
2009	3	Repair cooling tower
2009	3	Major steam turbine overhaul
2009	3	Upgrade steam turbine control system
2009	3	Rebuild steam control valves
2014	3	Boiler economizer replacement
2014	3	Install mercury control system
2009	3	Replace or re-tube 3 low-pressure feedwater heaters
2009	3	Replace bottom ash hopper refractory
2009	3	NO _x burner maintenance
2008	3	Replace boiler superheater tubes
2009	3	Replace boiler superheater tubes
2009	3	Replace or rewind the generator exciter
2011	3	Replace boiler superheater tubes
2009	3	Rewind the generator rotor
2009	3	Replace/rebuild cooling tower fire protection system
2008	3	Boiler burner replacement
2009	3	Boiler burner replacement
2011	3	Boiler burner replacement
2008	3	Replace boiler water wall tubes
2009	3	Replace boiler water wall tubes
2011	3	Replace boiler water wall tubes
2008	3	Install scrubber intelligent control system
2009	3	Replace air preheater baskets
2008	3	Rebuild/replace the startup boiler feed pump
2009	3	Upgrade boiler circulating pump mechanical seals
2008	3	Replace the 3-1 condensate pump
2010	3	Rebuild coal mill
2011	3	Rebuild coal mill
2012	3	Rebuild coal mill
2013	3	Rebuild coal mill
2014	3	Rebuild coal mill
2008	3	Replace coal piping
2013	3	Install forced draft fan variable frequency drives
2009	3	Replace coal piping
2011	3	Replace coal piping
2009	3	Replace 4160-volt relays

c: Craig Booth
Bob Crittenden
Bill Lawson
Chad Peterson
Angie Skinner

Prepared Comments of Micheal Dunn, President and CEO, PacifiCorp Energy

Wyoming Regional Haze Hearings – June 26 and 28, 2012

Good afternoon. My name is Micheal Dunn and I am president and chief executive officer of PacifiCorp Energy, the division of PacifiCorp that operates our electric generating facilities including wind, hydroelectric, natural gas, geothermal and coal. PacifiCorp supplies electricity to more than 1.7 million residential and business customers in Wyoming and five other western states.

PacifiCorp operates 19 coal-fueled units in Utah and Wyoming. Among those, 14 are BART-eligible and ten of those are in Wyoming. In addition to these 14 units, PacifiCorp also owns, but does not operate, a 100% interest in Cholla Unit 4, located in Arizona, as well as having an ownership interest in six additional units, including four units in Colorado that are required to install new BART controls. Simply stated, the regional haze requirements will have a greater impact on PacifiCorp and its customers than any other electric utility in the Western United States.

Because of the importance of this issue, PacifiCorp will be preparing and filing extensive written comments in this docket. My comments today will be brief, focusing on three key areas.

→ Regional Haze is primarily a State Issue

- (1) The Clean Air Act and EPA's own rules require regional haze requirements to be determined and implemented at the state level. In Wyoming, however, EPA has elected to reject part of Wyoming's carefully-crafted SIP and replace it with its own. This is not how the regional haze program is supposed to work. PacifiCorp believes that EPA's proposal fails to give proper deference to the State of Wyoming's regional haze determinations as required by the Clean Air Act.

The Wyoming Department of Environmental Quality conducted a robust BART analysis. In doing so, it exercised the very discretion contemplated by the Clean Air Act in applying the relevant factors to its BART determinations. These factors, found in EPA's own requirements, included consideration of issues important to the State of Wyoming, its citizens, PacifiCorp and our customers. Wyoming analyzed the BART issues over several years, conducted computerized modeling, obtained input from the public and regulated sources, and submitted to EPA two Regional Haze SIPs totaling hundreds of pages along with several hundred more pages of supporting analysis and documentation. However, rather than accepting the state's hard work and thoughtful determinations, EPA proposes to reject certain portions of the SIP and then not even follow its own rules in an effort to justify its proposal to force the installation of even more controls faster than the state has decided is necessary. Such an attempt by EPA nullifies the deference afforded the state of Wyoming by

the Clean Air Act. EPA is clearly and impermissibly substituting its judgment for that of the State of Wyoming's. Again, this is not how the regional haze program is supposed to work.

→ **PacifiCorp has already made and will continue to make reductions in its emissions**

- (2) Let me make it clear that PacifiCorp is not opposed to implementing cost-effective emissions controls to meet existing requirements and achieve environmental benefits, including perceptible regional haze improvements. This effort must be balanced, however, with PacifiCorp meeting its responsibility to supply reliable, affordable electricity. We believe that the Wyoming regional haze SIP strikes this balance appropriately.

Between 2005 and 2011, PacifiCorp spent approximately \$1.4 billion to reduce emissions of SO₂, NO_x and particulate matter at PacifiCorp's Wyoming and Utah generating facilities in order to comply with the Regional Haze programs approved by those states. Of that amount, approximately \$900 million was spent at Wyoming facilities. However, rather than accepting the state's decision that these significant costs and associated emission reductions already implemented – as well as those currently planned – meet this phase of the regional haze requirements, EPA has proposed to require even more controls on our Wyoming facilities in a faster time period than the state has required. EPA has justified its position, in part, by analyzing the Wyoming facilities on which PacifiCorp has already installed emission controls as if those controls had not been installed and the resulting emission reductions have not happened. In that way, EPA can act as if there is a larger regional haze problem to be resolved than there really is – and this guise is in order to unlawfully require five selective catalytic reduction projects, two selective non-catalytic reduction projects and two low-NO_x burner projects in a five year period of time under a program designed to achieve a visibility goal by 2064, fifty-two years in the future. EPA's justification should be rejected. Not even in the Eastern U.S., where health-based standards drive emission reductions, are such significant emission reduction projects required in so short a period of time. This brings me to my third point.

→ **EPA's proposed action imposes costs and expenses prematurely with no perceptible benefit in visibility**

- (3) Wyoming has better visibility than virtually any other state in the country. **[Refer to Exhibit 1, EPA Haze Map]** That is a conclusion reached by EPA as shown in this map. When we start from such a good position, it makes it difficult (and costly) for Wyoming to justify more emission reductions in order to try and make a great visibility position better. In that case, the state ends up requiring very expensive controls that can deliver only imperceptible visibility improvements. Even if all the electric generating units in Wyoming were to be completely shut down, there would be little improvement in visibility in the 20% worst days as required by the regional haze rules. This fact makes clear that EPA should not be ordering more or faster emission reductions just for the sake of adding new emission controls.

While EPA suggests that it is “working with state, local and tribal authorities to promote steady improvements in visibility” for PacifiCorp’s facilities, EPA’s proposal does not actually do that in a gradual manner over the entire course of the regional haze program ending in 2064. Instead, EPA seeks to front-load expensive controls in a short period of time in order to force reductions in emissions that will have no perceptible benefit on visibility.

[Refer To Exhibit 2, PacifiCorp’s Historic & Projected NO_x reductions] The blue line represents PacifiCorp’s historic and projected emissions. The red line represents a steady reduction to achieve zero emissions for all of our Wyoming coal facilities by 2064. EPA has proposed to have PacifiCorp dive from a cliff, represented by the orange line, to reduce emissions in a manner that will have no significant impact on visibility.

Again, it is important to examine the purposes of the Regional Haze program which is to achieve the goal of natural visibility conditions in Class I and scenic areas by 2064. The program is not intended to reduce emissions at every power plant in the West within the next five years, particularly when EPA’s proposed controls will do little to improve visibility in the areas the program is designed to address.

[Refer to Exhibit 3, Modeled Visibility Improvements Associated with the EPA FIP] The blue bars on this chart represent the modeled deciview improvements associated with the additional controls the EPA is imposing in their federal implementation plan. As can be seen from this exhibit, the modeled improvements are significantly lower than one deciview, which is represented by the red line. One deciview is the standard that EPA states is perceptible to the human eye. It is also important to note that the modeled improvements only occur over a few days in an entire calendar year. This leads to an inescapable question, “Why is EPA proposing to require such a significant investment in emission controls which result in virtually no visibility improvement perceptible to the human eye?”

These imperceptible modeled improvements are the result of using EPA’s approved visibility models – which have not been updated to use the most current information – and which significantly over predict both the impacts and the benefits associated with controlling NO_x emissions to reduce regional haze.

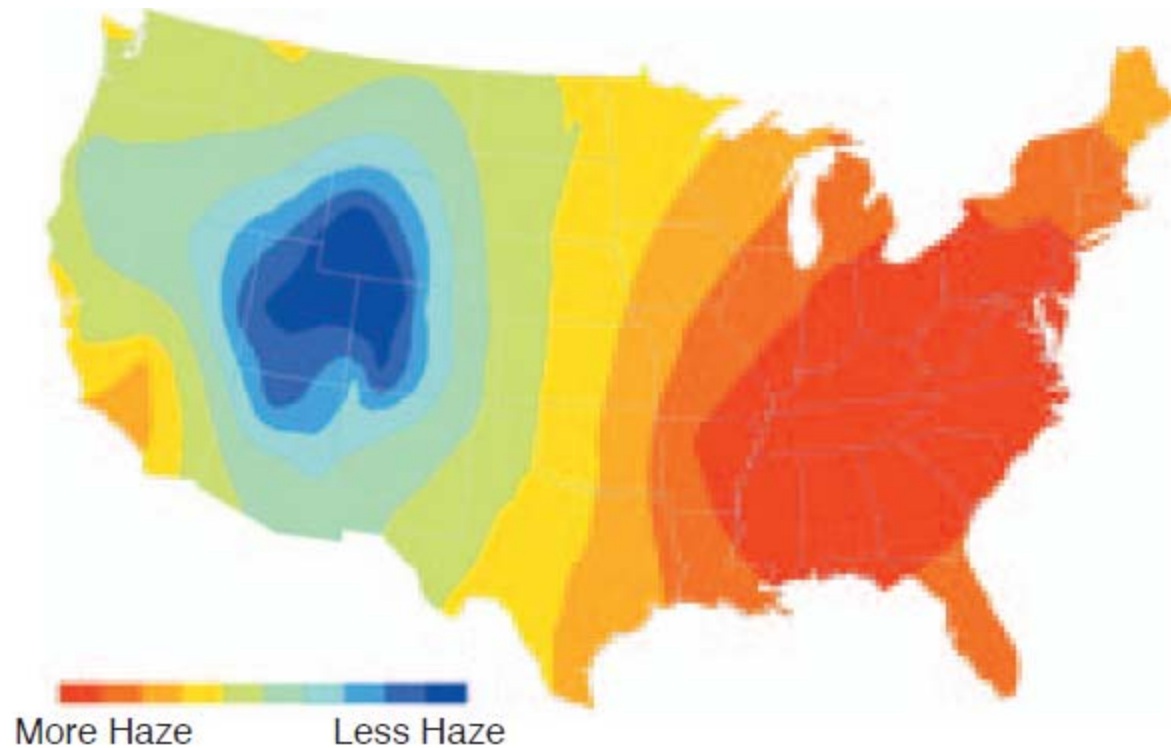
PacifiCorp currently plans to spend another \$800 million from 2012 through 2022 on emissions reduction projects to meet its current environmental compliance obligations. The EPA’s proposal in Wyoming would accelerate approximately \$260 million of that planned expenditure into the pre-2018 timeframe and would add approximately \$40 million in new compliance projects in that time frame as well. Along with those new and accelerated projects will come the costs of operating and maintaining the equipment of approximately \$7 to \$10 million annually, as well as ongoing capital expenditures of \$4 to \$5 million annually for catalyst replacement projects. To provide some general context around those numbers,

each \$240 million in capital investment currently increases customer rates by approximately 1.1%.

→ **Conclusion**

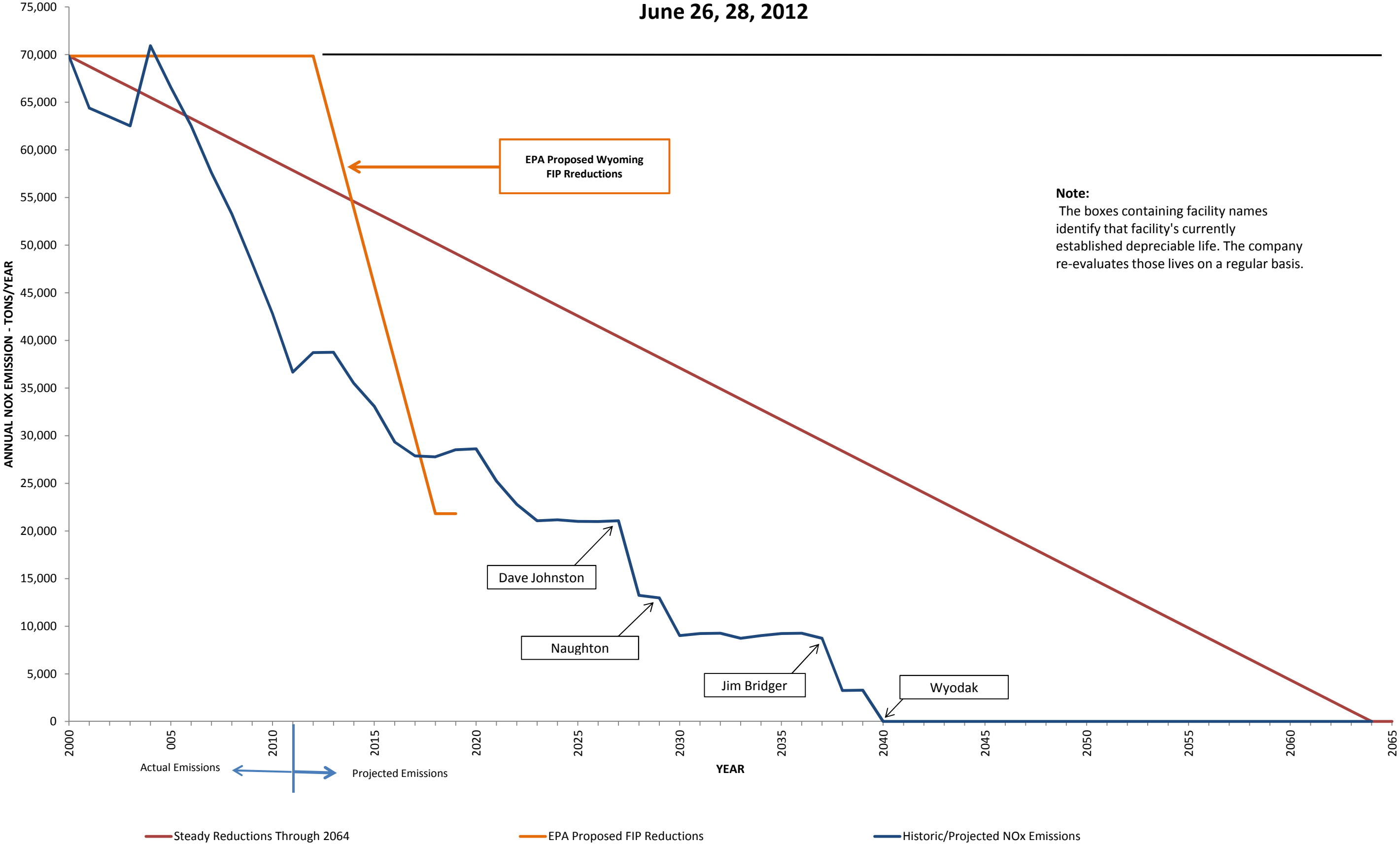
EPA's proposal to reject a key portion of Wyoming's regional haze SIP is out of line because it: (1) unlawfully rejects Wyoming's carefully-crafted discretion and improperly substitutes EPA's own decisions; (2) fails to account for the emission reduction and modeled visibility improvements associated with the emission controls already installed on PacifiCorp's facilities; and (3) would require large expenditures in the near term for no perceptible visibility improvements. PacifiCorp urges EPA to adopt the Wyoming regional haze SIP in its totality and withdraw its proposal that fails to take into account the facts that the state of Wyoming has so carefully considered. Thank you very much.

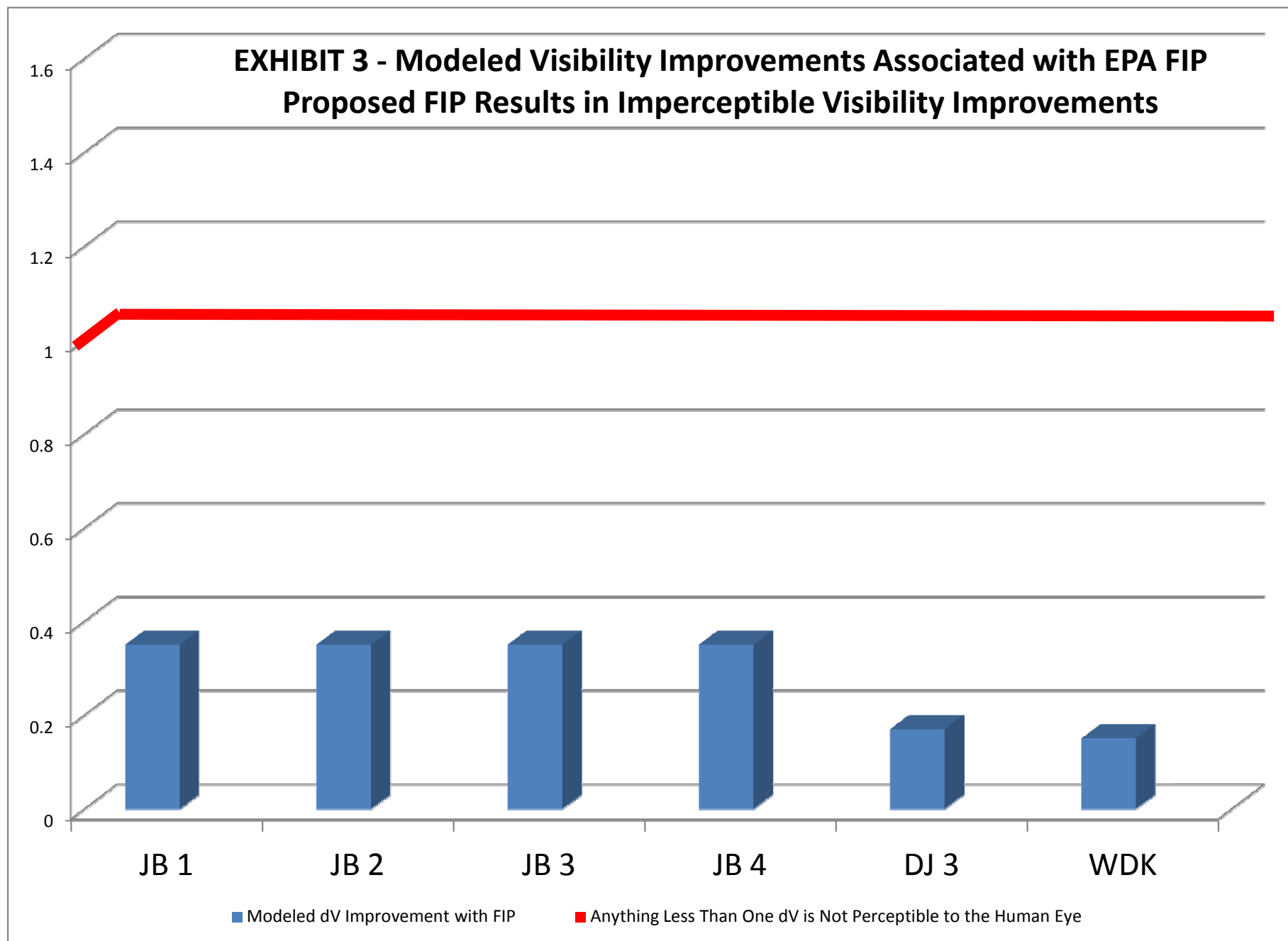
EXHIBIT 1 – EPA Haze Chart



Haze conditions vary across the country. Eastern U.S. areas have more haze due to higher pollutant and humidity levels.

EXHIBIT 2 - PacifiCorp - NO_x Emissions
EPA Regional Haze Hearings
June 26, 28, 2012





UE-246/PacifiCorp
June 7, 2012
Sierra Club Data Request 2.1

Sierra Club Data Request 2.1

Please confirm the following:

- a. Attach OPUC 220-1 CONF.xls represents the final economic analysis conducted by the Company prior to approving and proceeding with the Dave Johnston Unit 4 SO₂ and PM Emission Control Upgrade project.
- b. Attach OPUC 220-2 CONF.xls represents the final economic analysis conducted by the Company prior to approving and proceeding with the Hunter Unit 1 SO₂ and PM Emission Control Upgrade project.
- c. Attach OPUC 220-2 CONF.xls represents the final economic analysis conducted by the Company prior to approving and proceeding with the Hunter Unit 2 SO₂ and PM Emission Control Upgrade project.
- d. Attach OPUC 220-3 CONF.xls represents the final economic analysis conducted by the Company prior to approving and proceeding with the Jim Bridger Unit 3 SO₂ and PM Emission Control Upgrade project.
- e. Attach OPUC 220-4 CONF.xls represents the final economic analysis conducted by the Company prior to approving and proceeding with the Naughton Unit 1 Flue Gas Desulfurization System project.
- f. Attach OPUC 220-4 CONF.xls represents the final economic analysis conducted by the Company prior to approving and proceeding with the Naughton Unit 2 Flue Gas Desulfurization System project.
- g. Attach OPUC 220-5 CONF.xls represents the final economic analysis conducted by the Company prior to approving and proceeding with the Wyodak Unit 1 SO₂ and PM Emission Control Upgrade project.
- h. If the answer to any of the above is not affirmative, please provide the final economic analysis conducted by the Company prior to approving and proceeding with the listed projects.
- i. If any of these analyses were updated or revisited after the NTP dates listed in Teply Exhibit PAC/502, please provide such subsequent analyses.

Response to Sierra Club Data Request 2.1

- a. Confirmed.
- b. Confirmed.
- c. Confirmed.
- d. Confirmed.
- e. Confirmed.
- f. Confirmed.
- g. Confirmed.
- h. N/A

PacifiCorp Response to Sierra Club Data Request 1.12

Jim,

Thanks. I received both messages and will plan my time accordingly.

Have a good day!
Jamie

From: Doak, James [<mailto:James.Doak@PacifiCorp.com>]
Sent: Monday, June 30, 2008 1:12 PM
To: Sharp, Jamie
Cc: Skinner, Angeline; Tomsic, Kim; Booth, Craig; Harris, Gary; Hinshaw, Bernadette; Van Engelenhoven, Bob; Lawson, Bill
Subject: RE: Wyodak and Naughton

Jamie:

Naughton has the highest priority, followed by Wyodak.

We'd like to receive both permits by March/April of 2009.

Thanks.

Jim Doak
Lead Senior Engineer
PacifiCorp Energy
330 NTO
(801) 220-2306

From: Sharp, Jamie [<mailto:JSharp@wyo.gov>]
Sent: Monday, June 30, 2008 11:06 AM
To: Doak, James
Subject: Wyodak and Naughton

Hi Jim,

Which of these two applications is the highest priority for PacifiCorp? When do you wish to have the permits in hand?

Thanks,
Ms. Jamie Sharp
Air Quality Engineer
jsharp@wyo.gov
307-777-7817

E-Mail to and from me, in connection with the transaction of public business, is subject to the Wyoming Public Records Act and may be disclosed to third parties.

BART APPEAL SETTLEMENT AGREEMENT

The Wyoming Department of Environmental Quality, Air Quality Division (the “DEQ/AQD”) and PacifiCorp Energy, a division of PacifiCorp (“PacifiCorp”), enter into this BART Appeal Settlement Agreement (the “Settlement Agreement”) to fully and finally resolve PacifiCorp’s appeal before the Wyoming Environmental Quality Council (the “EQC”) in Docket No. 10-2801 wherein PacifiCorp challenged certain conditions of BART permit Nos. MD-6040 and MD-6042 for the Jim Bridger and Naughton power plants. The DEQ/AQD and PacifiCorp are collectively referred to herein as the “Parties” and sometimes individually as “Party.” The Settlement Agreement shall be effective between the Parties on the date that the last signature is affixed below (the “Effective Date”), conditioned on approval by the EQC as described herein.

Wyo. Stat. 16-3-107(n) and Chapter I, § 11 of the DEQ’s Rules of Practice & Procedure provide for the disposition of this contested case by stipulation of the Parties upon approval by the EQC. Additionally, Wyo. Stat § 35-11-112 empowers the EQC to order the modification of BART Permit Nos. MD-6040 and MD-6042 to resolve this contested case. To that end, PacifiCorp and the DEQ/AQD, conditioned on the approval of the EQC, hereby stipulate and agree as follows.

1. **Background:** As part of its obligation under the Clean Air Act’s Regional Haze Program, the State of Wyoming, through the DEQ/AQD, promulgated regulations requiring the installation of Best Available Retrofit Technology (“BART”) on certain eligible facilities. PacifiCorp timely complied with these regulations by filing applications for BART permits for its eligible facilities, including an application for its Bridger power plant on January 16, 2007, and its Naughton power plant on February 12, 2007. PacifiCorp further filed additional information with the DEQ/AQD relating to these applications. Following public notice and comment, and public hearings, the DEQ/AQD issued BART permit Nos. MD-6040 for the Bridger power plant and MD-6042 for the Naughton power plant on December 31, 2009. On February 26, 2010, PacifiCorp timely filed an appeal to the EQC of certain provisions in BART permit Nos. MD-6040 and MD-6042. Litigation ensued, including discovery and motion practice. This Settlement Agreement resolves all issues raised in that litigation. Also, in connection with this Settlement Agreement, PacifiCorp has provided to DEQ/AQD the information attached as Exhibit A which the parties intend to be used in the Wyoming Regional Haze SIP as that term is described below.
2. **Definitions:** As used in this Agreement, the following terms are defined as:

“BART Permit Appeal” means: PacifiCorp’s Appeal and Petition for Review of BART Permits regarding the Bridger BART Permit and the Naughton BART Permit, referred to as Docket No. 10-2801, before the EQC.

“BART Appeals Arguments” means: The arguments raised by PacifiCorp in the BART Permit Appeal, including its Motion for Partial Summary Judgment and

supporting Memorandum, filed June 30, 2010, and its Reply in Support of Its Motion for Partial Summary Judgment, filed August 31, 2010.

“Naughton BART Permit” means: BART permit No. MD-6042 as issued by the DEQ/AQD on December 31, 2009.

“Bridger BART Permit” means: BART permit No. MD-6040 as issued by the DEQ/AQD on December 31, 2009.

“Wyoming Regional Haze SIP” means: the final version of the Wyoming State Implementation Plan regarding “regional haze” and addressing regional haze requirements for Wyoming mandatory Class 1 areas under 40 CFR §51.309(g) as prepared by the DEQ/AQD and submitted to EPA for review and approval. As of the date of this Settlement Agreement, the DEQ/AQD has not completed the final version of the Wyoming Regional Haze SIP and instead has prepared a draft of that document dated August 25, 2009, which DEQ/AQD released previously for public comment. Based in part on those comments, DEQ/AQD intends to release an updated version of the draft Wyoming Regional Haze SIP for additional public comment before the end of 2010.

3. **Agreement:** The Parties have engaged in negotiations to reach a settled resolution to this contested case. The Parties have agreed, upon the terms contained herein, to settle and compromise PacifiCorp’s BART Permit Appeal, including the BART Appeals Arguments.
4. **Performance by PacifiCorp:** In reliance upon the releases, agreements, and representations of the DEQ/AQD in this Settlement Agreement, and conditioned upon the EQC’s approval of this Settlement Agreement and its terms, PacifiCorp shall do the following:
 - (a) Naughton - PacifiCorp shall withdraw its BART Appeals Arguments regarding the Naughton power plant, dismiss its BART Permit Appeal as it relates to the Naughton power plant, and agree to abide by the terms of the Naughton BART Permit;
 - (b) Bridger - PacifiCorp shall withdraw its BART Appeals Arguments regarding the Bridger power plant, dismiss its BART Permit Appeal as it relates to the Bridger power plant, and agree to abide the terms of the Bridger BART Permit as modified by the EQC in accordance with this Settlement Agreement, including the removal of Conditions 17 and 18;
 - (c) NOx Control for Bridger Units 3 and 4 – With respect to Bridger Units 3 and 4, PacifiCorp shall: (i) install SCR; (ii) install alternative add-on NOx control systems; or (iii) otherwise reduce NOx emissions to achieve a 0.07 lb/mmBtu 30-day rolling average NOx emissions rate. These installations shall occur, and/or this emission rate will be achieved, on Unit 3 prior to

December 31, 2015 and Unit 4 prior to December 31, 2016. These installations shall occur, and/or this emission rate will be achieved, in conjunction with PacifiCorp's planned overhaul schedule for these units and pursuant to a construction or other permit application to be submitted by PacifiCorp to AQD no later than December 31, 2012; and

- (d) NOx Control for Bridger Units 1 and 2 -- With respect to Bridger Units 1 and 2, PacifiCorp shall: (i) install SCR; (ii) install alternative add-on NOx control systems; or (iii) otherwise reduce NOx emissions not to exceed a 0.07 lb/mmBtu 30-day rolling average NOx emissions rate. These installations shall occur, and/or this emission rate will be achieved, on Unit 2 prior to December 31, 2021 and Unit 1 prior to December 31, 2022. These installations shall occur, and/or this emission rate will be achieved, in conjunction with PacifiCorp's planned overhaul schedule for these units and pursuant to a construction or other permit application to be submitted by PacifiCorp to AQD no later than December 31, 2017.
5. **Performance by the DEQ/AQD:** In reliance upon the releases, agreements and representations of PacifiCorp in this Settlement Agreement, and conditioned upon the EQC's approval of this Settlement Agreement and its terms, the DEQ/AQD shall do the following:
- (a) Naughton – The DEQ/AQD shall, pursuant to an order by the EQC approving this Settlement Agreement, include in the Wyoming Regional Haze SIP a statement explaining that the cost of the Naughton Unit 3 baghouse is reasonable when considering all factors relating to the existing PM controls in addition to those considered during the BART analysis.
 - (b) Bridger – The DEQ/AQD shall, pursuant to an order by the EQC approving this Settlement Agreement, delete Conditions 17 and 18 from the Bridger BART Permit and, in lieu of Conditions 17 and 18, adopt the requirements of paragraphs 4(c) and 4(d) of this Settlement Agreement into the Wyoming Regional Haze SIP as part of Wyoming's Long-Term Strategy and/or Reasonable Progress Goals; and
 - (c) PacifiCorp's Compliance with BART and LTS Requirements - The DEQ/AQD shall not require further PM or NOx reductions at Naughton Unit 3, or require further NOx reductions at Bridger Units 1 – 4, for purposes of meeting BART, Long-Term Strategy requirements and/or Reasonable Progress Goals in the Wyoming Regional Haze SIP through 2023.
6. **Conditions of Settlement:** The Parties' duties, rights and obligations of this Settlement Agreement are conditioned upon, and the Parties shall in good faith cooperate to achieve, the following:

- (a) The EQC and any other required Wyoming governing authority must approve this Settlement Agreement and its terms;
 - (b) PacifiCorp and the DEQ/AQD must file a joint stipulated motion with the EQC requesting dismissal of PacifiCorp's BART Permit Appeal, and the EQC must dismiss the BART Permit Appeal on approval of the terms contained herein subject only to EQC's continuing jurisdiction as described in Section 7 below;
 - (c) The EQC must order the Bridger BART Permit be modified as required herein; and
 - (d) EPA must approve those portions of the Wyoming Regional Haze SIP that are consistent with the terms of this Settlement Agreement. Provided, however, that unless EPA affirmatively disapproves such portions of the Wyoming Regional Haze SIP in a final rulemaking, the parties shall continue to abide by the terms of this Settlement Agreement.
7. **Changed Circumstances:** The Parties agree that this Settlement Agreement may be subject to modification if future changes in either: (i) federal or state requirements or (ii) technology would materially alter the emissions controls and rates that otherwise are required hereunder. In that case, either Party may request that the other Party enter into an amendment to this Settlement Agreement consistent with such changes. The Parties shall negotiate in good faith to amend the affected Settlement Agreement provision(s) consistent with the changed federal or state requirements or technology and with the purposes of this Settlement Agreement. If the Parties cannot agree on the proposed amendment, then either Party may request the EQC to determine if the proposed amendment is consistent with the changed federal or state requirements or technology and with the purposes of this Settlement Agreement. In that case, the Parties anticipate that the EQC determination will be incorporated into an EQC order that requires the Parties to proceed in accordance with its terms, including the possibility of entering into the proposed amendment. The Parties further anticipate that the EQC will retain continuing jurisdiction over the BART Permit Appeal and this Settlement Agreement for the foregoing purposes only.
8. **Reservation of Rights:** PacifiCorp reserves the right to appeal or challenge any actions by AQD, EQC or EPA that are inconsistent with this Settlement Agreement. In addition, if the EQC takes any action which is materially inconsistent with or in any way materially alters this Settlement Agreement, then this Settlement Agreement shall be voidable at the option of the Party materially affected by the EQC's actions.
9. This Settlement Agreement shall be admissible by either Party without objection by the other Party in any subsequent action between these Parties to enforce the terms hereof or as otherwise required herein.

10. Neither Party shall have any claim against the other for attorney fees or other costs incurred with the issues resolved. Each Party shall bear its own attorney fees and costs, if any, incurred in connection with the BART Permit Appeal and this Settlement Agreement. Each Party assumes the risk of any liability arising from its own conduct. Neither Party agrees to insure, defend or indemnify the other.
11. This Settlement Agreement is binding upon PacifiCorp, its successors and assigns, and upon the DEQ/AQD.
12. This Settlement Agreement may only be amended in writing, signed by both Parties.
13. Neither the DEQ/AQD nor the State of Wyoming nor any of its Agencies shall be held as a party to any contracts or agreements entered into by PacifiCorp to implement any condition of this Agreement.
14. Nothing in this Agreement relieves PacifiCorp of its duty to comply with all applicable requirements under the Wyoming Environmental Quality Act (WEQA), and rules, regulations, and standards adopted or permits issued thereunder. DEQ/AQD does not warrant or aver that PacifiCorp's completion of any aspect of this Agreement will result in compliance with the WEQA and rules, regulations and standards adopted or permits issued thereunder.
15. The State of Wyoming and the DEQ/AQD do not waive sovereign immunity by entering into this Settlement Agreement, and specifically retain all immunity and all defenses to them as sovereigns pursuant to Wyo. Stat. §1-39-104(a) and all other state law.
16. The Parties do not intend to create in any other individual or entity the status of third party beneficiary, and this Agreement shall not be construed so as to create such status. The rights, duties and obligations contained in this Agreement shall operate only among the Parties to this Agreement.
17. Should any portion of this Agreement be judicially determined to be illegal or unenforceable, the remainder of this Agreement shall continue in full force and effect, and either Party may renegotiate the terms affected by the severance.
18. The construction, interpretation and enforcement of this Agreement shall be governed by the laws of the State of Wyoming. The Courts of the State of Wyoming shall have jurisdiction over this Agreement and the parties, and the venue shall be the First Judicial District, Laramie County, Wyoming.
19. This Agreement may be executed in any number of separate counterparts any one of which need not contain the signatures of more than one Party but all of such

counterparts together will constitute one Agreement. The separate counterparts may contain original, photocopy, or facsimile transmissions of signatures.

20. The persons signing this Settlement Agreement certify that they are duly authorized to bind their respective Party to this Settlement Agreement.
21. This agreement is not binding between the Parties until fully executed by each Party.

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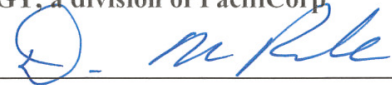
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PACIFICORP ENERGY, a division of PacifiCorp

By:



Name:

DANA RALSTON

Title:

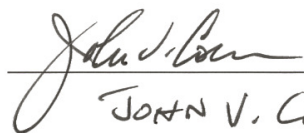
VICE PRESIDENT GENERATION

Date:

11-2-2010

THE WYOMING DEPARTMENT OF
ENVIRONMENTAL QUALITY

By:



Name:

JOHN V. CORRA

Title:

Director

Date:

11/3/10

THE WYOMING DEPARTMENT OF
ENVIRONMENTAL QUALITY/DIVISION OF AIR
QUALITY

By:



Name:

STEVEN A. DIETRICH

Title:

AQD - ADMINISTRATOR

Date:

11-3-10

Approved As To
Form



Nancy E. Vehr,
Senior Assistant Attorney General

November 2, 2010

Exhibit A

PacifiCorp's Emissions Reductions Plan

In connection with its Best Available Retrofit Technology ("BART") determinations and its other regional haze planning activities, the Wyoming Department of Environmental Quality, Air Quality Division ("AQD") asked PacifiCorp to provide additional information about its overall emission reduction plans through 2023. The purpose is to more fully address the costs of compliance on both a unit and system-wide basis. PacifiCorp is committed to reduce emissions in a reasonable, systematic, economically sustainable and environmentally sound manner while meeting applicable legal requirements. These legal requirements include complying with the regional haze rules which encompass a national goal to achieve natural visibility conditions in Class 1 areas by 2064

Summary

PacifiCorp owns and operates 19 coal-fueled generating units in Utah and Wyoming, and owns 100% of Cholla Unit 4, which is a coal-fueled generating unit located in Arizona. PacifiCorp is in the process of implementing an emission reduction program that has reduced, and will continue to significantly reduce emissions at its existing coal-fueled generation units over the next several years. From 2005 through 2010 PacifiCorp has spent more than \$1.2 billion in capital dollars. It is anticipated that the total costs for all projects that have been committed to will exceed \$2.7 billion by the end of 2022. The total costs (which include capital, O&M and other costs) that will have been incurred by customers to pay for these pollution control projects during the period 2005 through 2023, are expected to exceed \$4.2 billion, and by 2023 the annual costs to customers for these projects will have reached \$360 million per year.

Environmental benefits, including visibility improvements will flow from these planned emission reductions. PacifiCorp believes that the emission reduction projects and their timing appropriately balance the need for emission reductions over time with the cost and other concerns of our customers, our state utility regulatory commissions, and other stakeholders. PacifiCorp believes this plan is complementary to and consistent with the state's BART and regional haze planning requirements, and that it is a reasonable approach to achieving emission reductions in Wyoming and other states.

PacifiCorp's Long-Term Emission Reduction Commitment

Table 1 below identifies the emission reduction projects and related construction schedules as currently included in PacifiCorp's reduction plan.

Exhibit A - PacifiCorp's Emissions Reduction Plan
November 2, 2010
Page 2 of 10

Table 1: Long-Term Reduction Plan

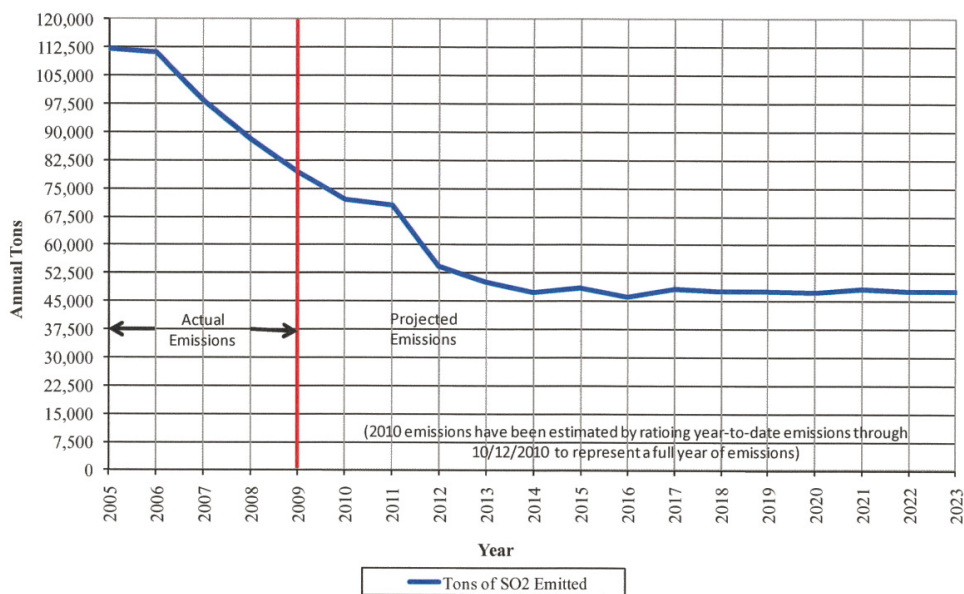
Plant Name	SO2 Scrubbers Installation - I Upgrades - U	Low NOx Burner Installations	Baghouse Installations	Status of SO2 / LNB / Baghouse Permitting	Selective Catalytic Reduction
Hunter 1	2014 - U	2014	2014	Permitted	
Hunter 2	2011 - U	2011	2011	Under Construction	
Hunter 3	Existing	2008	Existing	Completed	
Huntington 1	2010 - U	2010	2010	Under Construction	
Huntington 2	2007 - I	2007	2007	Completed	
Dave Johnston 3	2010 - I	2010	2010	Completed	
Dave Johnston 4	2012 - I	2009	2012	Under Construction	
Jim Bridger 1	2010 - U	2010		Completed	2022
Jim Bridger 2	2009 - U	2005		Completed	2021
Jim Bridger 3	2011 - U	2007		Permitted	2015
Jim Bridger 4	2008 - U	2008		Completed	2016
Naughton 1	2012 - I	2012		Under Construction	
Naughton 2	2011 - I	2011		Under Construction	
Naughton 3	2014 - U	2014	2014	Baghouse Permitted	2014
Wyodak	2011 - U	2011	2011	Under Construction	
Cholla 4	2008 - U	2008	2008	Completed	

The following charts represent the reductions in emissions that will occur at units owned by PacifiCorp in Utah, Wyoming and Arizona¹. It is significant to note that permitting has been completed for all but the SCR projects; permitting for the SCR projects will be completed as needed in advance of project construction. The emission estimates shown in these charts have been calculated using projected unit generation and heat rate data in conjunction with each unit's permitted emission rate. In those cases where the units do not have emissions controls the estimates have been based on projections of the future coal quality. All projections used are from PacifiCorp's ten-year business plan. Actual future emissions will be less than those estimated in these charts since the units will operate below their permitted rates.

¹ PacifiCorp is also a joint owner of coal-fueled facilities in Colorado and Montana that are subject to regional haze planning requirements and for which PacifiCorp will incur associated costs of emissions controls.

Exhibit A - PacifiCorp's Emissions Reduction Plan
November 2, 2010
Page 3 of 10

**2005 - 2009 Actual and 2010 - 2023 Projected SO₂ Emissions
PacifiCorp's Arizona, Utah & Wyoming Coal-Fired Units**



**2004 - 2009 Actual and 2010 - 2023 Projected NO_x Emissions
PacifiCorp's Arizona, Utah & Wyoming Coal-Fired Units**

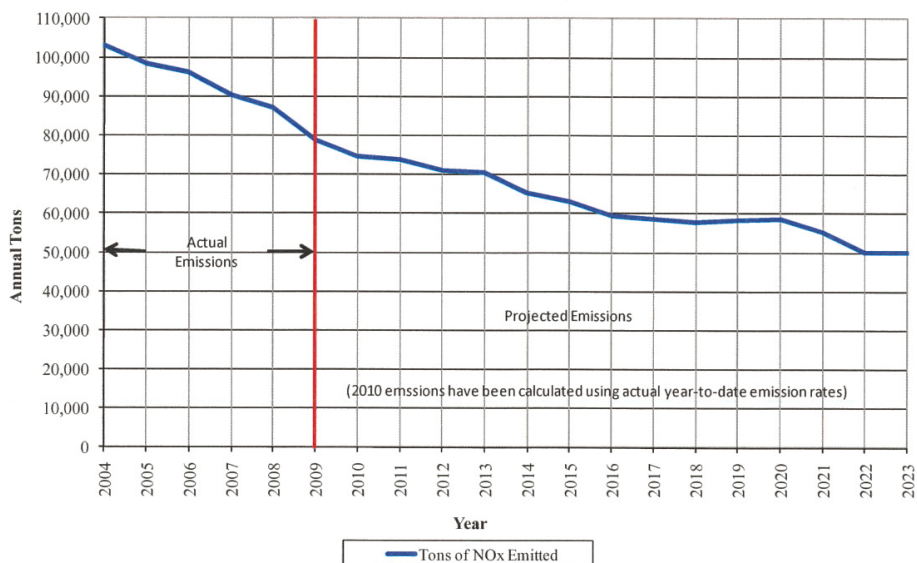


Exhibit A - PacifiCorp's Emissions Reduction Plan
November 2, 2010
Page 4 of 10

Project Installation Schedule

Emission reduction projects of the number and size described above take many years to engineer, plan and build. When considering a fleet the size of PacifiCorp's, there is a practical limitation on available construction resources and labor. There is also a limit on the number of units that may be taken out of service at any given time as well as the level of construction activities that can be supported by the local infrastructures at and around these facilities. Such limitations directly impact both the overall timing of these projects as well as their timing in relation to each other. Additional cost and construction timing limitations include the loss of large generating resources during some parts of construction and the associated impact on the reliability of PacifiCorp's electrical system during these extended outages. In other words, it is not practical, and it is unduly expensive, to expect to build these emission reduction projects all at once or even in a compressed time period. The pressure on emission reduction equipment and skilled labor is likely to be exacerbated by the significant emission reduction requirements necessitated by the Environmental Protection Agency's Clean Air Transport Rule which requires emission reductions in 31 Eastern states and the District of Columbia beginning in 2012 and 2014. The Environmental Protection Agency has indicated that a second Transport Rule is likely to be issued in 2011, requiring additional reductions in the Eastern U.S. beyond those effective in 2014. The balancing of these concerns is reflected in the timing of PacifiCorp's emission reduction commitments.

Priority of Emission Reductions

PacifiCorp's initial focus has been on installing controls to reduce SO₂ emissions which are the most significant contributors to regional haze in the western US. In addition, PacifiCorp continues to rely on the rapid installation of low NO_x burners to significantly reduce NO_x emissions. Also, the installation of five SCRs (or similar NO_x-reducing technologies) will be completed by 2023 and reduce NO_x emissions even further. PacifiCorp's commitment also includes the installation of several baghouses to control particulate matter emissions. For those units which utilize dry scrubbers, baghouses have the added benefit of improving SO₂ removal. Baghouses also significantly reduce mercury emissions.

In addition to reducing emissions at existing facilities, PacifiCorp has avoided increasing emissions by adding more than 1,400 megawatts of renewable generation between 2006 and 2010. In order to meet growing demand for electricity, PacifiCorp added non-emitting wind generation to its portfolio at a cost of over \$2 billion and has dismissed further consideration of a new coal-fueled unit.

Emission Reductions and BART Deadlines

As depicted in the table and charts above, PacifiCorp began implementing its emission reduction commitments in 2005. This was well ahead of the emission reduction timelines under the regional haze rules which require BART to be installed no later than five years following approval of the applicable Regional Haze SIP. This also provides a graphic demonstration of the construction schedule and other limitations described above, as PacifiCorp was required to begin installing emission control projects at some units earlier in order to complete projects at other

Exhibit A - PacifiCorp's Emissions Reduction Plan

November 2, 2010

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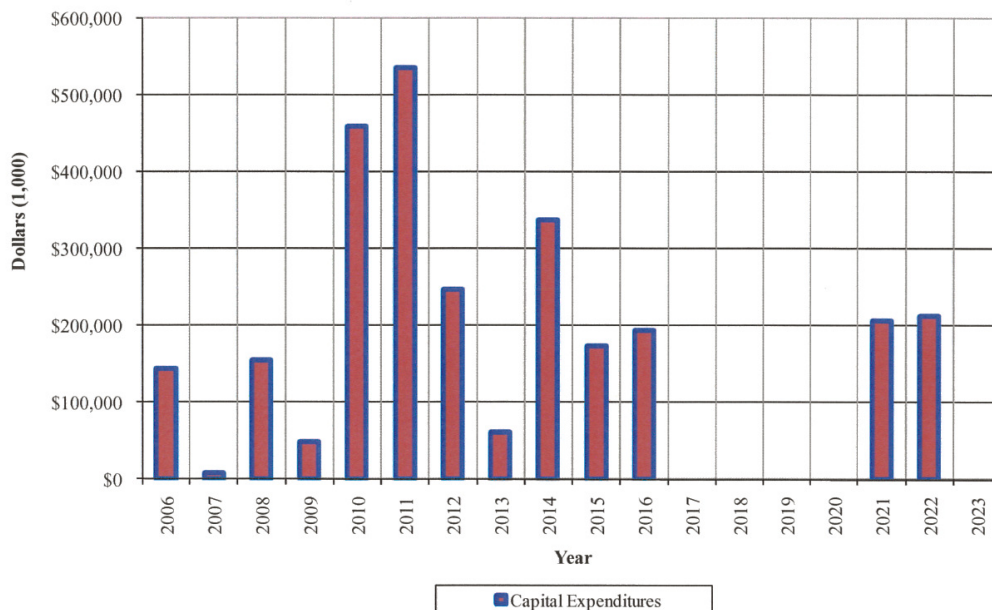
units within the five years after SIP approval. The table above demonstrates that most of the projects to be built between 2010 and 2014, likewise, will be installed in advance of the required completion date under BART requirements.

Customer Impacts

The following charts identify the timing and magnitude of the capital and O&M expenses that will be incurred due to the projects identified in Table 1. The charts identify:

1. The timing and magnitude of the capital costs.
2. The O&M expenses that will be incurred due to these projects.
3. The expected annual costs² through 2023 that customers will be incur as a result of these specific pollution control projects.

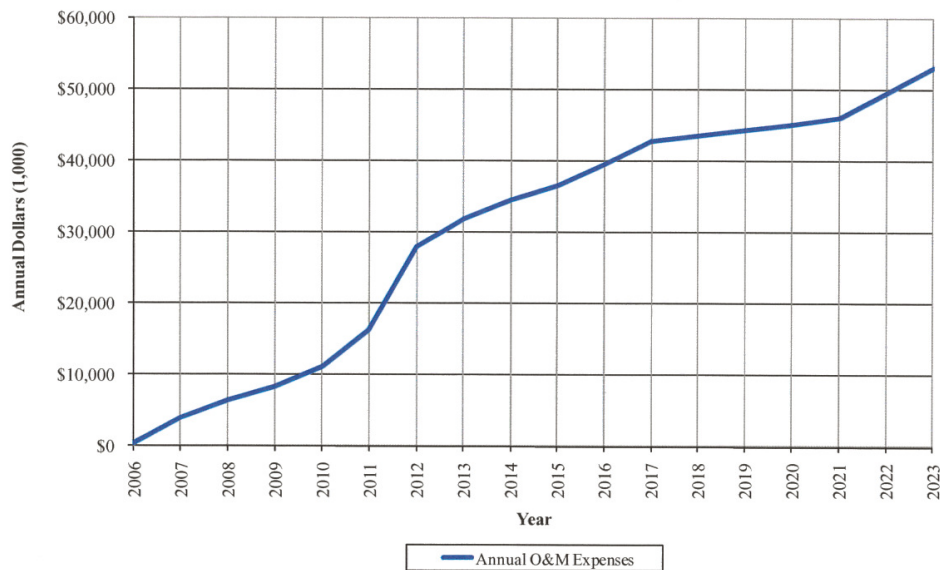
**Capital Expenditures to Add Pollution Control Equipment on PacifiCorp's
Arizona, Utah & Wyoming Coal-Fired Units**



² PacifiCorp has made every attempt to provide an accurate estimate of the anticipated increase in annual revenue requirements that will ultimately be translated to increases in customers' electricity rates. However, there are several variables such as interest rates, inflation rates, discount rates, depreciation lives, and final construction costs and operating and maintenance expenses that will be considered at the time these projects actually go into rate base and will influence the actual revenue requirements associated with these capital projects.

Exhibit A - PacifiCorp's Emissions Reduction Plan
November 2, 2010
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**Increases In O&M Expenses Due to Additional Pollution Control Equipment
on Arizona, Utah & Wyoming Coal-Fired Units**



**Annual Increase to Customers Due to Additional Pollution Control
Equipment on Arizona, Utah & Wyoming Coal-Fired Units**

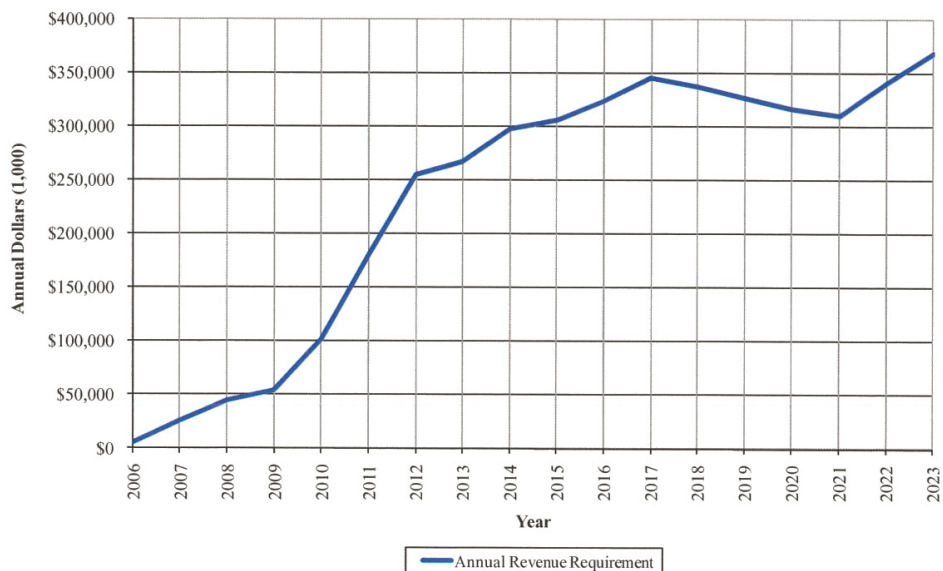


Exhibit A - PacifiCorp's Emissions Reduction Plan
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As can be seen from the previous charts, the rate increases for PacifiCorp customers associated with PacifiCorp's emission reduction strategy alone will be significant. In the event that PacifiCorp is required to accelerate or add to the planned emission reduction projects, the cost impacts to our customers can be expected to increase incrementally, particularly as plant outage schedules are extended and the need for skilled labor and material increases in the near term.

Of particular note, the projected costs reflect only the installation of the noted emission reduction equipment. These cost increases do not include other costs expected to be incurred in the future to meet further emission reduction measures or address other environmental initiatives, including but not limited to (see Attachment 1):

1. Implementation of Utah's Long Term Strategy for meeting regional haze requirements during the 2018-2023 time period.
2. The addition of mercury control equipment under the requirements of the upcoming mercury MACT provisions. PacifiCorp estimates that \$68 million in capital will be incurred by 2015 and annual operating expenses will increase by \$21million per year to comply with mercury reduction requirements. In addition, anticipated regulation to address non-mercury hazardous air pollutant (HAPs) emissions may require significant additional reductions of SO₂, as a precursor to sulfuric acid mist, from non-BART units that currently do not have specific controls to reduce SO₂ emissions.
3. Mitigating and controlling CO₂ emissions. While Congress has not yet passed comprehensive climate change legislation, in December 2009, the Administrator of the Environmental Protection Agency made a finding that greenhouse gases in the atmosphere threaten the public health and welfare of current and future generations. Having made the so-called "endangerment finding," EPA issued the final greenhouse gas tailoring rule, effective January 2, 2011, which will require greenhouse gas emissions to be addressed under PSD and Title V permits³. Likewise, mandatory reporting of greenhouse gas emissions to the Environmental Protection Agency commenced beginning in January 2010.
4. In addition, there are a number of regional regulatory initiatives, including the Western Climate Initiative that may ultimately impact PacifiCorp's coal-fueled facilities. PacifiCorp's generating units are utilized to serve customers in six states – Wyoming, Idaho, Utah, Washington, Oregon and California. California, Washington and Oregon are participants in the Western Climate Initiative, a comprehensive regional effort to reduce greenhouse gas emissions by 15% below 2005 levels by 2020 through a cap-and-trade program that includes the electricity sector; each state has implemented state-level emissions reduction goals. California, Washington and Oregon have also adopted greenhouse gas emissions performance standards for base load electrical generating resources under which emissions must not exceed 1,100 pounds of CO₂ per megawatt

³ The Environmental Protection Agency has not yet published its proposed guidance on what constitutes Best Available Control Technology for greenhouses gases.

Exhibit A - PacifiCorp's Emissions Reduction Plan

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hour. The emissions performance standards generally prohibit electric utilities from entering into long-term financial commitments (e.g., new ownership investments, upgrades, or new or renewed contracts with a term of 5 or more years) unless the base load generation supplied under long-term financial commitments comply with the greenhouse gas emissions performance standards. While these requirements have not been implemented in Wyoming, due to the treatment of PacifiCorp's generation on a system-wide basis (i.e., electricity generated in Wyoming may be deemed to be consumed in California based on a multi-state protocol), PacifiCorp's facilities may be subject to out-of-state requirements.

5. Regulations associated with coal combustion byproducts. In June 2010, the Environmental Protection Agency published a proposal to regulate the disposal of coal combustion byproducts under the Resource Conservation and Recovery Act's Subtitle C or D. Under either regulatory scenario, regulated entities, including PacifiCorp, would be required, at a minimum; to retrofit/upgrade or discontinue utilization of existing surface impoundments within five years after the Environmental Protection Agency issues a final rule and state adoption of the appropriate controlling regulations. It is anticipated that the requirements under the final rule will impose significant costs on PacifiCorp's coal-fueled facilities within the next eight to ten years.
6. The installation of significant amounts of new generation, including gas-fueled generation and renewable resources.
7. The addition of major transmission lines to support the renewable resources and other added generation.
8. Increasing escalation rates on fuel costs and other commodities

BART and Regional Haze Compliance

PacifiCorp firmly believes that the commitments described above meet the letter and intent of the regional haze rules, including the guidance provided by the EPA known as "Appendix Y." The regional haze program is a long-term effort with long-term goals ending in 2064. It must be approached from that perspective. It was never intended to require SCR on BART-eligible units within the first five years of the program. Rather, it calls for a transition to lower emissions exactly as PacifiCorp has implemented to date and as it has proposed going forward through 2023.

In its evaluation of emission reductions for regional haze purposes, the state should also consider several other variables which will significantly affect emissions and costs over the next ten years. These include such things as the development of new emission control technology, anticipated new emission reduction legislation and rules, the new ozone standard, the one hour SO₂ and NO₂ standards, the PM_{2.5} standard, potential CO₂ regulation and costs, an aging fleet, and changing economic conditions. All of these variables matter and will affect the long-term viability of each PacifiCorp coal unit and will contribute to the reduction of regional haze in the course of the

Exhibit A - PacifiCorp's Emissions Reduction Plan

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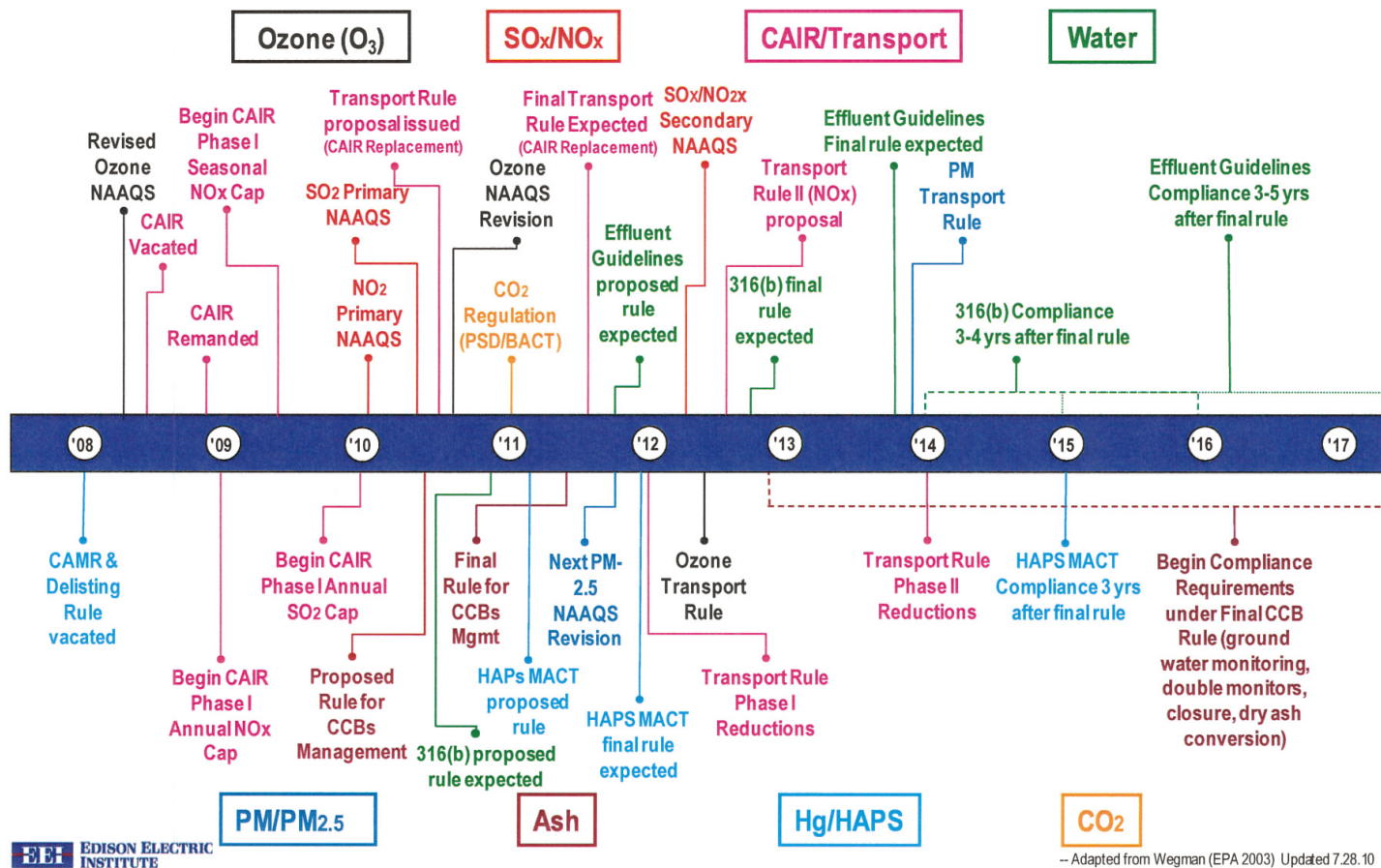
implementation of these programs. This, in turn, will affect the controls, costs and future operational expectations associated with these generating resources.

Conclusion

PacifiCorp has made a significant, long-term commitment to reducing emissions from its coal-fueled facilities and requests that the AQD consider this commitment as a reasonable approach to achieving emission reductions in Wyoming.

November 2, 2010

Attachment 1 Possible Timeline for Environmental Regulatory Requirements for the Utility Industry



UE-246/PacifiCorp
September 5, 2012
CUB Data Request 44 –2nd Supplemental

CUB Data Request 44

Regarding PacifiCorp's Utah "PREFILING NOTICE OF INTENT TO FILE A VOLUNTARY REQUEST FOR APPROVAL OF SIGNIFICANT ENERGY RESOURCE DECISION," wherein PacifiCorp "provides public notice that it intends to file a voluntary request for approval (the "Request") of its significant energy resource **decision** to construct two major emission-reduction projects; namely the addition of selective catalytic reduction ("SCR") systems on Unit 3 and on Unit 4 of the Jim Bridger steam electric plant," please provide:

- a. Documents that demonstrate internal approval for these investments.
- b. The date on which a decision was made to move forward with these investments.
- c. Documents that outline the process by which the investments were approved.
- d. Documents identifying the parties within PacifiCorp that issued approval for the investments.
- e. Documents identifying the analytical basis for the approval.

2nd Supplemental Response to CUB Data Request 44

The Company continues to object to this request as unduly burdensome and not reasonably calculated to lead to the discovery of relevant evidence. The Company's proposed investment in SCR systems on Jim Bridger Units 3 and 4 is not at issue in this docket. Without waiving these objections, the Company provides the following supplemental response:

The Company has not yet made a final decision to construct the selective catalytic reduction (SCR) systems on Jim Bridger Unit 3 and Unit 4, although installation of these systems, or alternative add-on NOx control systems capable of achieving NOx emissions of 0.07 lb/MMBtu on a 30-day rolling average, is currently required by the state of Wyoming under its Regional Haze state implementation plan. The Company therefore does not have any internal approval documents authorizing construction of these investments, and will not begin the internal approval process until the Certificate of Public Convenience and Necessity proceeding in Wyoming and the Company's voluntary procurement review in Utah have been successfully completed; and all other necessary permitting requirements are met.

UE-246/PacifiCorp
August 30, 2012
OPUC Data Request 343

OPUC Data Request 343

Related to the PVRR(d) analyses referred to on pages 17 and 18 of PAC/1500 Teply (provided as Excel files OPUC 220-4 - Workpaper - Nau1 - Rebuttal - 2014 Close and OPUC 220-4 - Workpaper - Nau2 - Rebuttal - 2014 Close), please describe the reasons for shifting the CAI investment amounts from the 2009-2012 period to 2014. In the description please include a discussion of the affect of the time value of money in that shift in time periods.

Response to OPUC Data Request 343

The Company prepared the referenced analysis presented in PAC/1500 in response to the testimony of CUB and Sierra Club, particularly Sierra Club witness Dr. Fisher. The Company revised its Naughton analysis to show the effect on the PVRR(d) if the Company had the option of waiting as long as possible to install the environmental retrofit projects (as advocated by Sierra Club in Exhibit Sierra Club/100), even though this approach to compliance is not viable and would arguably be imprudent.

Two notable changes were made in the revised analysis. First, the in-service dates were pushed back from June 2012 (Naughton unit 1) and November 2011 (Naughton unit 2) to January 2014. Accordingly, the project capital costs were shifted and escalated to reflect the later in-service date. Moving the in-service dates back decreased the PVRR(d) benefit of the CAI investment as compared to the original economic analysis. Second, the revised analysis includes the capital and AFUDC in rate base as it is placed in service rather than as spent. This adjustment reflects a more accurate calculation of customer benefits and eliminates a built-in conservatism that the original study included.

UE-246/PacifiCorp
April 27, 2012
Sierra Club Data Request 1.30

Sierra Club Data Request 1.30

Coal Unit Screening Analysis. Reference PacifiCorp's 2011 IRP Update, filed March 30, 2012, footnote 23 on page 65 and pages 71-90.

- a. Please provide the full, non-redacted Screening Analysis provided to Oregon IRP intervenors with all data and formulas intact (CoalRetireScreen_IRPTechWorkshop.xlsx). Please disable any protections in this analysis.
- b. Was this screening analysis used to "analyze and address ongoing investment in the Company's coal units versus alternatives including retirement, replacement and repowering?" (Reference the Direct Testimony of Chad A. Teply, Exhibit PAC/500, page 92 at 12-15) If so, how?
- c. Were the results of this screening analysis consistent with the filed March 31, 2011 IRP? If not, in what ways were the results inconsistent?
- d. Were the input parameters of this screening analysis consistent with the input parameters of the PVRR(d) analyses as described in discovery request SC 1-27 ("CAI PVRR(d) analyses"), above? If not, which results were inconsistent?
- e. Were the results or conclusions of this screening analysis consistent with the results or conclusions of the PVRR(d) analyses as described in discovery request SC 1-27 ("CAI PVRR(d) analyses"), above? If not, which results were inconsistent?
- f. Please provide the date upon which this screening analysis was finalized.
- g. With the exception of the PVRR(d) analyses described in discovery request SC 1-27, has the Company used this screening analysis for any decision-making purposes prior to the 2011 IRP Update? If so, please explain what purposes and when.
- h. Please estimate the approximate labor and materials cost (in dollars) required to create the screening analysis.

Response to Sierra Club Data Request 1.30

- a. Please refer to Confidential Attachment Sierra Club 1.30.
- b. No. The purpose of the screening analysis was to develop a relative ranking among individual BART eligible coal units as a means to prioritize which BART eligible units should be targeted for a more detailed analysis using the System Optimizer model.
- c. Please refer to the Company's response to subpart b above. The rankings from the screening analysis are consistent with the results of the coal replacement study in the 2011 IRP Update.
- d. The input parameters in the screening analysis are not the same as the input parameters described in the Company's response to Sierra Club Data Request 1.27. The screening analysis, which was developed to prioritize more detailed

UE-246/PacifiCorp
April 27, 2012
Sierra Club Data Request 1.30

analysis (refer to the Company's response to subpart b above), was completed in February 2012 and reflects the most current input assumptions and data available at the time the analysis was completed. The input parameters described in the Company's response to Sierra Club Data Request 1.27 were also performed using the most current assumptions available at the time the analyses were completed; however, because these analyses were completed at different times, the input parameters are not the same.

- e. The screening analysis did not evaluate past investment decisions, and therefore, it is not comparable to the analysis described in the Company's response to Sierra Club Data Request 1.27.
- f. The screening analysis was completed January 30, 2012.
- g. Please refer to the Company's response to subpart b. above. The Company has never used the screening model for decision making purposes. It was used to prioritize which coal units to study in more detail.
- h. The screening model was produced in the ordinary course of business. The Company has not performed the analysis requested.