

**EXHIBIT NO. \_\_\_(RJR-16)  
DOCKETS UE-17\_\_\_/UG-17\_\_\_  
2017 PSE GENERAL RATE CASE  
WITNESS: RONALD J. ROBERTS**

**BEFORE THE  
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND  
TRANSPORTATION COMMISSION,**

**Complainant,**

**v.**

**PUGET SOUND ENERGY,**

**Respondent.**

**Docket UE-17\_\_\_**

**Docket UG-17\_\_\_**

**FIFTEENTH EXHIBIT (NONCONFIDENTIAL) TO THE  
PREFILED DIRECT TESTIMONY OF**

**RONALD J. ROBERTS**

**ON BEHALF OF PUGET SOUND ENERGY**

**JANUARY 13, 2017**

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF MONTANA  
BILLINGS DIVISION

SIERRA CLUB and MONTANA )  
ENVIRONMENTAL )  
INFORMATION CENTER, )  
Plaintiffs, )

vs. )

TALEN MONTANA LLC, AVISTA )  
CORPORATION, PUGET )  
SOUND ENERGY, PORTLAND )  
GENERAL ELECTRIC COMPANY, )  
NORTHWESTERN )  
CORPORATION, PACIFICORP, )  
Defendants. )

Case No: CV 13-32-BLG-DLC-JCL

**DECLARATION OF GORDON CRISWELL IN OPPOSITION TO  
PLAINTIFFS' MOTION FOR ATTORNEYS' FEES**

I, Gordon Criswell, hereby declare the following under penalty of perjury:

**BACKGROUND**

1. I have worked at the Colstrip Steam Electric Station ("Colstrip") for more than thirty-five years.

2. I received a Bachelor of Science in Chemical Engineering from Montana State University in 1979. I have been a registered professional engineer in the state of Montana since 1988.

3. I began working at the Colstrip Steam Electric Station (“Colstrip”) in 1980 and have since been involved in all aspects of the plant’s four electric generating units and their operation.

4. From 1995 to 1998, as Director for Project Engineering at Colstrip, I was responsible for the engineering and implementation of capital projects at the plant. From 1998 to 2002, as Manager of Process Support, I was responsible for operation, maintenance, planning, and engineering related to Colstrip’s balance of plant systems. From 2002 to 2005, as Power Generation Manager, I was responsible for operation, maintenance, planning, and engineering related to the power generation systems at Colstrip, including the plant’s boilers, turbines, and electrical equipment.

5. From 2005 to 2009, as Environmental Manager, I was responsible for environmental activities at Colstrip.

6. From 2009 until the present, I have served as the Director of Environmental and Engineering Compliance for PPL Montana, now Talen. In this role, I am responsible for Talen’s compliance with all environmental requirements as well as requirements imposed by the North American Reliability Corporation (“NERC”), an international regulatory authority whose mission is to ensure the reliability of the bulk power system in North America. As such, I have a full understanding of the environmental regulations that impact Colstrip.

7. As part of my current responsibilities, I have been involved in evaluating the timing and level of cost to comply with current and future environmental regulations at Colstrip and the impact of such costs on the future viability of the Colstrip units. Additionally, I participated in the decision-making process leading up to the settlement with Plaintiffs in this case and therefore am knowledgeable about Talen's conclusion in advance of settlement that Units 1 and 2 would be expected to retire before mid-2022 as a result of economic and environmental regulatory factors unrelated to the ongoing litigation.

8. In preparing this declaration, I have reviewed portions of Sierra Club's and Montana Environmental Information Center's ("Plaintiffs") Brief in Support of Motion for Attorneys' Fees and Costs ("Brief"). I also have reviewed the Declaration of Walter F. Koucky, which was cited by Plaintiffs' in their Brief.

**RESPONSE TO PLAINTIFFS' BRIEF AND KOUCKY  
DECLARATION**

9. Plaintiffs' Brief concludes that the agreement in the Consent Decree to retire Colstrip Units 1 and 2 will lead to a significant emission reduction in the Colstrip area. To draw this conclusion, Plaintiffs and Mr. Koucky compared the average emissions at Colstrip in 2014 and 2015 when Units 1 and 2 were operating to emissions after July 1, 2022, when Units 1 and 2 have been retired. While true that emissions will be reduced due to the retirement of Units 1 and 2, Plaintiffs err by concluding that those emission reductions are due to the litigation or the

Consent Decree.

10. The Consent Decree requires the retirement of Units 1 and 2 by July 1, 2022. Thus, the proper comparison to understand the impact of the Consent Decree is to compare Colstrip emissions after July 1, 2022 under the Consent Decree to emissions after that date under business-as-usual scenarios. As indicated in the separate declaration of Charles Baker, business-as-usual scenarios must consider both the economics of the units (which dictate whether, and how much, the units will run and thus emit) as well as environmental regulations, which might drive down emissions in the future or cause the retirement of generating units. Mr. Koucky did not undertake this analysis.

11. Prior to entering into the settlement with Plaintiffs, Talen had projected that Units 1 and 2 would be retired before mid-2022 under business-as-usual scenarios due to the lack of profitability of those units and their consequent inability to bear additional costs to comply with current and anticipated environmental regulations.

12. As a result, the agreement to retire those units by July 1, 2022 in the Consent Decree resulted in no additional emission reductions or benefits to the Plaintiffs. Talen and Puget Sound Energy (“PSE”)—the owners of Units 1 and 2—merely agreed to do what was projected to be required anyway by July 1, 2022.

13. In his declaration, Mr. Koucky made no attempt to evaluate what

emissions from Units 1 and 2 would be under business-as-usual scenarios in 2022 based on economics and current and anticipated environmental regulations. As I just noted, Talen acted based on its projection that the units would not be operating at all in that time frame. But even assuming that the continued operation of Units 1 and 2 would be economic, Mr. Koucky has not accounted for the emission reductions that Colstrip Units 1 and 2 would have to achieve to continue operating beyond July 1, 2022. Rather, Mr. Koucky compared actual emissions in 2014 and 2015 to emissions after assumed retirement of Units 1 and 2 on July 1, 2022. Yet Colstrip Units 1 and 2 are subject to myriad environmental regulatory programs that would require significant emission reductions to continue operating after July 1, 2022. By failing to account for these emission reductions, Mr. Koucky massively overstated the emission reductions from the Consent Decree. More important, the high compliance costs related to those very same programs, when layered on top of the already unprofitable situation for those units, are the very same reasons that Talen did not project Units 1 and 2 to operate after July 1, 2022. In failing to account for the fact that economics and environmental regulation would require retirement of Units 1 and 2 by that date, Mr. Koucky incorrectly attributed emission reductions to the Consent Decree. Mr. Koucky's comparison is not relevant to determining the actual impact (or lack thereof) of the Consent

Decree.<sup>1</sup>

14. I understand that further economic issues unrelated to environmental compliance are covered in the separate declaration of Charles Baker. Here I will comment on the impact of some of the most pertinent existing and anticipated environmental regulations.

15. There are a wide range of existing and anticipated environmental regulations that impact Colstrip and would be expected to burden Units 1 and 2 prior to 2022 or thereafter. The primary regulations that impacted our view of the future were the Clean Power Plan and the Regional Haze Rule. I discuss these programs separately below.

16. Talen concluded that either the Clean Power Plan or Regional Haze Rule alone would have added substantial additional burdens to Units 1 and 2, which were already unprofitable. Yet Talen evaluated the impact of these rules together, along with other economic factors, in projecting retirement of those units before July 1, 2022, regardless of the litigation.

### **Clean Power Plan**

17. Based on my calculations, EPA's Clean Power Plan requires a 30

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<sup>1</sup> Similarly, Mr. Koucky's comparison of purported BACT-level emission reductions to emission reductions resulting from the Consent Decree suffers from the same mistake. He wrongly assumes that those emissions were due to the Consent Decree and does not account for the fact they would have been required anyway by environmental regulation and economics.

percent reduction in carbon dioxide emissions from Montana coal plants by 2022.<sup>2</sup> Colstrip Units 1 and 2 make up 27 percent of carbon dioxide emissions from coal plants in Montana. Based on Talen's projections of likely compliance scenarios with the Clean Power Plan, a retirement of Units 1 and 2 affords an easier path for Units 3 and 4 to comply and continue operating. In analyzing the regulatory requirements, Talen thus determined that retirement of Units 1 and 2 would be a key mechanism for compliance with the Clean Power Plan.

18. Even leaving aside the shut-down scenario, the Clean Power Plan would require further reductions in CO<sub>2</sub> emissions at Colstrip. At the very least, Talen concluded that Units 1 and 2 would need to reduce their CO<sub>2</sub> emissions by at least 30 percent. Mr. Koucky does not address the impact of this requirement in 2022. Units 1 and 2 produce around 5.3 million tons of CO<sub>2</sub> per year. A 30 percent reduction is around 1.6 million tons per year. Even assuming the technology were proven and available for a coal-fired power plant, the cost of reducing CO<sub>2</sub> by retrofitting an existing coal plant with an amine-type scrubber is approximately \$50 per ton of carbon dioxide removed. This cost only includes the cost of capturing the CO<sub>2</sub> and not the additional cost of sequestration which is estimated to add at least 25% to the CO<sub>2</sub> capture cost. This would cost at least \$80 million per year for Units 1 and 2, making them further uneconomical in the

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<sup>2</sup> Even though the Clean Power Plan has been stayed during appellate review, Talen recognizes that the Plan may be upheld and must plan accordingly.



market. Thus, rather than bear this cost, Units 1 and 2 would retire. Thus, under the Clean Power Plan scenario, Colstrip Units 1 and 2 would not survive beyond 2022.

### **Regional Haze Program**

19. EPA's Regional Haze program is a long-term program that requires EPA and the states to achieve natural level visibility in all class I areas in the country (e.g., National Parks) by 2064. The first phase of the program was implemented in the last five years and was focused on a particular group of older electric generating units, including Colstrip Units 1 and 2. That phase requires compliance with emission rates consistent with the installation of Best Available Retrofit Technology ("BART") on units that had not undergone PSD review. EPA's general approach to BART for Units 1 and 2 was to require emission rates based on upgrades to existing scrubbers for SO<sub>2</sub> control and installation of controls for NO<sub>x</sub> emissions. While Colstrip successfully challenged EPA's BART determination and that determination is now on remand to EPA, one reason to retire Colstrip Units 1 and 2 was to avoid installation of additional controls and ensure compliance with BART. To that end, Plaintiffs agreed as part of the Consent Decree not to oppose Talen and PSE's position that emissions reductions resulting from cessation of operation of the boilers at Units 1 and 2 are sufficient to resolve BART emission rates under the Regional Haze program. In other words,

Plaintiffs accept that shutting down Units 1 and 2 will be Talen and PSE's compliance mechanism for the BART requirements under the Regional Haze program.

20. Moreover, independent of the Consent Decree, retirement of Units 1 and 2 also is part of Colstrip's compliance mechanism for the second phase of the Regional Haze program. The second phase of the Regional Haze program is scheduled to be implemented starting in 2018. In the second phase, EPA and the states will develop regulations that achieve "reasonable progress" towards achieving the natural level of visibility in Class I areas. These regulations will be focused on NO<sub>x</sub> and likely SO<sub>2</sub> reductions. In evaluating future scenarios for Colstrip Units 1 and 2, Talen believed it very likely that EPA would seek to require additional NO<sub>x</sub> and SO<sub>2</sub> emission reductions from those Units in the 2020s to ensure reasonable progress (similar to what EPA required in the initial Montana Federal Implementation Plan for Units 1 and 2). To achieve further reductions of NO<sub>x</sub> emissions, Talen considered that the estimated capital cost could range from \$27 million for burner modifications/SNCR to \$165 million for SCR for Units 1 and 2. To further reduce SO<sub>2</sub> emissions, Talen considered that the estimated capital cost could range from \$6 million for lime addition to \$56 million for an additional scrubber. The cost of these controls would make operation of Units 1 and 2 even more unprofitable than currently projected, thus leading Talen to

conclude that avoidance of these costs through retirement of the two units would be necessary by the 2022 time frame, particularly in light of the compliance timeline of the Clean Power Plan. Mr. Koucky did not evaluate the impacts of the Regional Haze program on the emissions from Colstrip Units 1 and 2 after July 1, 2022, when undertaking his emissions analysis.

21. Again, by agreeing to retire Units 1 and 2 in the Consent Decree, Talen merely agreed to do what was going to be required anyway based on current and anticipated environmental regulations and economics.

#### **Interim Emission Rates**

22. The Consent Decree sets interim emission limits for Units 1 and 2 for SO<sub>2</sub> and NO<sub>x</sub> (limits that will be in effect until those units are retired). In general, these emission rates are higher than Colstrip's existing emissions, meaning that Colstrip can continue to operate at its current emissions with an adequate compliance margin to ensure compliance with the Consent Decree. Thus, the interim emission rates will require no additional action on behalf of Colstrip and do not represent any additional emission reductions. Mr. Koucky does not comment on the interim emission rates.


23. For NO<sub>x</sub>, the Consent Decree sets emission limits (on a 30-day rolling average) of 0.45 lb/mmBTU for Unit 1 and 0.20 lb/mmBTU for Unit 2. Units 1 and 2 have been operating well within these emission limits. For the past year, the

30-day rolling average for Unit 1 has been 0.34 lb/mmBTU and for Unit 2 has been 0.15 lb/mmBTU.

24. For SO<sub>2</sub>, the Consent Decree sets emission limits (on a 30-day rolling average) of 0.40 lb/mmBTU for both Units 1 and 2. Units 1 and 2 have been operating well within this emission limit. For the past year, the 30-day rolling average for Unit 1 has been 0.15 lb/mmBTU and for Unit 2 has been 0.12 lb/mmBTU. The current Colstrip permitted emission rate for SO<sub>2</sub> is 0.20 lb/mmBTU on a 30-day rolling day average across all 4 units. Given other, more stringent SO<sub>2</sub> emission limits for Units 3 and 4, Colstrip Units 1 and 2 would need to operate below 0.40 lb/mmBTU to comply with this weighted average emission limit. As a result, the interim emission limits in the Consent Decree are no more stringent than Colstrip's existing emission rates and require no additional action by Colstrip to comply.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct.

Executed on October 27, 2016

  
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Gordon Criswell