

**REDACTED**

Docket No. 20000-418-EA-12

Witness: Cindy A. Crane

BEFORE THE WYOMING PUBLIC SERVICE  
COMMISSION

ROCKY MOUNTAIN POWER

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**REDACTED**  
Rebuttal Testimony of Cindy A. Crane

March 2013

1 **Q. Please state your name, business address and present position with**  
2 **PacifiCorp (“Company”).**

3 A. My name is Cindy A. Crane. My business address is 1407 West North Temple,  
4 Suite 310, Salt Lake City, Utah 84116. My position is Vice President, Interwest  
5 Mining Company and Fuel Resources for PacifiCorp Energy.

6 **Q. Briefly describe your business experience.**

7 A. I joined PacifiCorp in 1990 and have held positions of increasing responsibility,  
8 including Director of Business Systems Integration, Managing Director of  
9 Business Planning and Strategic Analysis and Vice President of Strategy and  
10 Division Services. My responsibilities have included the management and  
11 development of PacifiCorp’s 10-year business plan, assessing individual business  
12 strategies for PacifiCorp Energy, managing the construction of the Company’s  
13 Wyoming wind plants and assessing the feasibility of a nuclear power plant. In  
14 March 2009, I was appointed to my present position as Vice President of  
15 Interwest Mining Company and Fuel Resources. In my position I am responsible  
16 for the operations of Energy West Mining Company and Bridger Coal Company  
17 as well as overall coal supply acquisition and fuel management for PacifiCorp’s  
18 coal plants.

19 **Q. Have you previously filed testimony in this proceeding?**

20 A. No. I did not file direct testimony in this proceeding.

21 **Q. What is the purpose of your rebuttal testimony?**

22 A. The purpose of my rebuttal testimony is to:

23 

- Present the Company’s update to coal prices utilized in rebuttal;

- 1           • Discuss the Company’s fuel cost update to the base case, four-unit  
2           operation as well as the two-unit operation;
- 3           • Respond to the Wyoming Industrial Energy Consumers (WIEC) witness  
4           Mr. Randall J. Falkenberg’s claim that the Company has created a  
5           mismatch between recovery of the final reclamation costs in the selective  
6           catalytic reduction (SCR) and gas firing cases;
- 7           • Rebut the contention of Sierra Club witness Dr. Jeremy Fischer that the  
8           Company could feasibly sell coal to other facilities, sell coal to other  
9           Company coal plants and avoid immediate reclamation of the mine; and
- 10          • Rebut Dr. Fischer’s contention that the Bridger mine coal could be  
11          delivered to other PacifiCorp locations at a competitive price by  
12          explaining that Dr. Fischer has ignored liquidated damages among other  
13          costs that make his assumption uneconomic.

14   **Company Updates to Coal Costs**

15   **Q.    Did the Company update coal costs in its rebuttal filing?**

16   A.    Yes. The Company updated its long-term price projections for the coal fleet. The  
17          coal update reflects the Company’s most recent coal price projections of mine  
18          operating costs for the captive mines as well as forward market and transportation  
19          prices for purchased coal.

20   **Q.    Does the Company’s rebuttal testimony include updated coal price  
21          projections for both the Jim Bridger plant four-unit and two-unit  
22          operations?**

23   A.    Yes. Bridger Coal’s mine operating costs and mine capital, as well as third party

1 coal costs, have been updated to reflect both plant operating scenarios.

2 **Q. Please explain the nature of the updates and the change in assumptions**  
3 **associated with the Jim Bridger plant scenarios.**

4 A. Subsequent to the original filing, Bridger Coal Company completed extensive life  
5 of mine planning and cost analysis, and as a result, the Company has more current  
6 and detailed mine plans to rely on as part of this analysis. Consistent with the  
7 Company's direct testimony, the two-unit coal operations scenario still reflects  
8 the closure of the Bridger Coal surface mine in connection with conversion to gas  
9 of Jim Bridger Units 3 and 4. The base case continues to reflect a two dragline  
10 operation, but due to the new mine plan, the draglines are no longer both deployed  
11 in the southern part of the surface mine. Instead, one of the draglines will be  
12 uncovering coal in [REDACTED], a previously undisturbed mining area. By  
13 placing the second dragline in [REDACTED], Bridger Coal dramatically reduces  
14 the increasing overburden required to be removed in mining the deeper seams in  
15 the southern portion of the mine.

#### 16 **Coal Cost Update**

17 **Q. Please explain the updates to the Jim Bridger plant fuel options included in**  
18 **the Company's rebuttal filing.**

19 A. As shown in Mr. Rick T. Link's Confidential Exhibit RMP\_\_\_(RTL-1R), coal  
20 costs in the four-unit operation increased. Measured on a price related basis, cash  
21 coal costs increased by approximately [REDACTED] on a net present value (NPV)  
22 basis. The increase incorporates updated third party coal prices and transportation

1 costs for Black Butte coal as well as updated cash operating costs for Bridger  
2 Coal Company.

3 Coal costs in the two-unit operation decreased, which is also shown in Mr.  
4 Link's Confidential Exhibit RMP\_\_\_(RTL-1R). On a price related basis, Jim  
5 Bridger plant cash coal costs decreased by approximately [REDACTED] on a NPV  
6 basis and also incorporate updated third party coal prices and transportation costs  
7 for Black Butte coal and Bridger Coal cash operating costs.

8 **Q. Have the final reclamation trust contributions and sinking fund analyses**  
9 **been updated for Bridger Coal Company?**

10 A. Yes. As reflected in Mr. Link's Confidential Exhibit RMP\_\_\_(RTL-3R), the  
11 Company updated its sinking fund analysis and final reclamation trust  
12 contribution rates. The Company's share of annual contributions to the final  
13 reclamation trust in the base case increased from [REDACTED] in the original  
14 filing to [REDACTED] in the update. In the two-unit scenario, final reclamation  
15 trust contributions decreased slightly through 2017 and increased thereafter.

16 **Coal Cost Update – Four-Unit Operation (Base Case)**

17 **Q. Can you please identify the primary drivers which resulted in the estimated**  
18 **[REDACTED] coal cost related increase for the base case between the original**  
19 **filing and rebuttal?**

20 A. Yes. The table below lists the major cost related variances from the original filing.

<u>Source</u>	<u>NPV Millions</u>
Black Butte Coal Costs	[REDACTED]
Union Pacific Rail Costs	[REDACTED]
Bridger Coal Operating Costs	[REDACTED]
Change in Supply Mix	[REDACTED]

1           Approximately [REDACTED] million of the [REDACTED] million increase in Bridger Coal operating  
2           costs is associated with the increased final reclamation contribution trust levels  
3           identified above. The remainder of the increase is primarily associated with higher  
4           mine operating costs during the 2015 - 2017 period while [REDACTED] is being  
5           permitted and developed. During this period both draglines continue to operate in  
6           the southern portion of the surface mine; however, each dragline is operating on a  
7           single shift per day rather than two shifts per day.

8           **Q.    What is causing the [REDACTED] increase for Change in Supply Mix in the**  
9           **base case?**

10          A.    The change in supply mix reflects the increase in supply cost for the Jim Bridger  
11          plant primarily during the development of the [REDACTED] reserves. The  
12          increase principally occurs during the 2015–2017 timeframe and reflects the  
13          additional cost associated with replacement of Bridger Coal Company with Black  
14          Butte deliveries during the 2015–2017 timeframe while the [REDACTED]  
15          reserves are being developed.

16          **Q.    Why are both Black Butte coal costs and Union Pacific rail costs projected to**  
17          **increase in the base case?**

18          A.    [REDACTED]  
19          [REDACTED]  
20          [REDACTED]  
21          [REDACTED]  
22          [REDACTED]  
23          [REDACTED]

1 [REDACTED]  
2 [REDACTED]  
3 [REDACTED]  
4 [REDACTED].

5 **Coal Cost Update – Two-Unit Operation**

6 **Q. Please identify the primary drivers of the approximate [REDACTED] cost**  
7 **related decrease (NPV), between the original filing and rebuttal.**

8 A. There is approximately a [REDACTED] decrease in Bridger Coal cash operating  
9 costs and an [REDACTED] increase in plant coal costs due to a change in supply mix  
10 between Bridger Coal Company and Black Butte coal supplies. The decrease in  
11 Bridger Coal Company cash operating costs reflects reduced underground mine  
12 operating costs starting in 2017 partially offset by an increase associated with  
13 higher final reclamation costs starting in 2019.

14 **Q. Have mine capital projections been updated?**

15 A. Yes, as provided in Mr. Link’s Confidential Exhibit RMP\_\_\_(RTL-2R), mine  
16 capital expenditures have increased in both the base case and two-unit operation  
17 scenarios. The increase reflects additional surface and underground mine reserve  
18 acquisition costs as well as additional mine extension costs and longwall system  
19 rebuild/replacement costs. Capital costs increased by approximately [REDACTED]  
20 [REDACTED], NPV, for the base case and two-unit operation scenarios,  
21 respectively.

1 **Final Reclamation/Sinking Fund Calculation**

2 **Q. Please explain the purpose of Bridger Coal Company's sinking fund**  
3 **calculation.**

4 A. In 1989, the Bridger Coal Company owners established a final reclamation trust  
5 to fund actual final reclamation work. The sinking fund calculation is utilized to  
6 determine the appropriate final reclamation trust contribution rate and ensure  
7 sufficient funds exist in the trust to support final reclamation work once coal  
8 production ceases. Contributions to the final reclamation trust are included as part  
9 of Jim Bridger plant coal costs and are a component of net power costs for  
10 ratemaking purposes.

11 **Q. Has the Company updated its sinking fund analysis for the Jim Bridger plant**  
12 **fueling operations as part of its rebuttal?**

13 A. Yes. As discussed earlier, the Company has updated its sinking fund analysis and  
14 final reclamation trust contribution rates for each fueling operation scenario.

15 **Q. Can you explain why the annual final reclamation contribution rates**  
16 **increased from [REDACTED] in the original filing to [REDACTED] in the**  
17 **update?**

18 A. Yes. A final reclamation plan for the base case was originally prepared in 2009  
19 and utilized in development of a sinking fund analysis and final reclamation trust  
20 contributions. That final reclamation plan, however, was not updated prior to the  
21 original filing and therefore no longer reflected the final reclamation trust  
22 contributions necessary to support future final reclamation expenses.



1           The Company's rebuttal analysis assumes a two dragline operation with  
2 one dragline in the south and the other dragline in [REDACTED] and final  
3 reclamation trust contributions continue through 2037 when coal production  
4 ceases and the Jim Bridger plant is assumed to retire at the end of its book life.

5 **Q. What should the final reclamation trust contributions have been in the**  
6 **original filing for the base case?**

7 A. The Company's share of final reclamation trust contributions should have been  
8 approximately [REDACTED] for the two dragline operation in the south.

9 **WIEC/Recovery of costs associated with final reclamation**

10 **Q. Mr. Falkenberg states on page 5, lines 24-25, in Exhibit RJF-2 of his direct**  
11 **testimony that the Company has created a mismatch between the recovery of**  
12 **the costs associated with the final reclamation in the SCR and gas-firing**  
13 **cases because in the continued coal operation case, some of the reclamation**  
14 **costs are not recovered until the period after the study horizon, while full**  
15 **recovery occurs in the gas conversion case. Is this correct?**

16 A. Yes. In the Company's original filing, contributions to the final reclamation trust  
17 were included through 2030 as a component of cash costs used in the System  
18 Optimizer model (SO Model). The Company's rebuttal analysis now includes  
19 reclamation costs contributions through 2037.

1 **Bridger Coal Company Surface Mine – Supply and Demand**

2 **Q. With respect to the shutdown of the Bridger surface mine, Dr. Fischer, on**  
3 **page 33 of his direct testimony, contends that Bridger Coal Company could**  
4 **feasibly sell coal to other facilities, maintaining surface operations and**  
5 **offsetting remediation costs, and therefore not burden the Bridger unit with**  
6 **the costs of an accelerated remediation process. Does the Company agree**  
7 **with this contention?**

8 A. No. As the Company previously communicated in its responses to data requests  
9 WIEC 8.58 there is already a significant imbalance between supply and demand  
10 for coal in Southwest Wyoming. With the impending gas conversion of Naughton  
11 3, that imbalance surges. The Company believes that under a two-unit coal  
12 operation at the Bridger plant at least one other mine in Southwest Wyoming  
13 would be shuttered. Southwest Wyoming is a niche market with limited  
14 participants. The relatively low heat content in comparison to Colorado and Utah  
15 coals and the high ash content relative to Powder River Basin coals confines  
16 Southwest Wyoming coal largely to the local area.

17 **Q. On page 35 of his direct testimony, Dr. Fischer suggests that Bridger Coal**  
18 **could competitively supply at least five PacifiCorp coal plants in the case that**  
19 **Jim Bridger 3 & 4 are taken out of Service. Do you agree?**

20 A. No, not with the current infrastructure. Bridger Coal Company would be required  
21 to construct a rail loadout facility and a spur to the Union Pacific mainline.  
22 Besides ignoring the lack of a rail loadout facility at Bridger Coal Company, Dr.

1 Fischer also disregards that the majority of the Company plants are not capable of  
2 receiving coal by rail.

3 **Q. Which five plants does Dr. Fischer suggest that Bridger Coal could**  
4 **competitively supply and provide a cost savings?**

5 A. The Hunter and Huntington plants in Utah; Craig and Hayden in Colorado and the  
6 Naughton plant in Wyoming.

7 **Q. Can you please describe how the Hunter and Huntington plants receive coal?**

8 A. The Utah plants receive all of their coal either via conveyor from Deer Creek or  
9 trucked from local mines; neither the Hunter plant nor the Huntington plant is  
10 located near enough to the Union Pacific mainline to make rail deliveries feasible.  
11 Dr. Fischer's analysis completely ignores the cost of rail transportation from the  
12 Bridger mine as well any capital investment necessary to construct a rail spur and  
13 a coal unloading facility for either Hunter or Huntington.

14 **Q. Do you have other concerns with Dr. Fischer's assumption that Bridger Coal**  
15 **Company coal could be consumed by the Utah plants?**

16 A. Yes. Bridger surface coal's low heat content and low ash fusion temperature are  
17 incompatible with the quality specifications for the Utah plants and may  
18 contribute to boiler slagging. Dr. Fischer's analysis is devoid of any mention of  
19 potential capital expenditures necessary to consume Bridger Coal Company coal  
20 quality.

21 **Q. Do you have concerns with shipping Bridger coal to the Naughton plant?**

22 A. Yes. While the Naughton plant is more proximate to Bridger Coal Company than  
23 the Utah plants, there still is no rail unloading facility or spur. The Naughton plant

1 receives its coal via an overland conveyor from Westmoreland's Kemmerer mine  
2 under a long-term contract that extends through 2021.

3 **Q. Does the Westmoreland agreement contain an annual contract minimum?**

4 A. Yes. The contract minimum precludes the Company from shipping Bridger coal  
5 to the Naughton plant. The impending gas conversion of Naughton 3 will require  
6 the remaining two units to operate close to capacity to avoid contract damages  
7 under the Kemmerer contract. Trucking of Bridger coal would only exacerbate  
8 attaining the contract minimum.

9 **Q. Would Bridger coal shipments to Company non-operated plants such as  
10 Craig and Hayden face similar obstacles?**

11 A. Yes. Dr. Fischer's analysis similarly ignores the Company's contractual  
12 obligations under its long-term coal supply agreements for the joint-owned plants.  
13 The current coal supply arrangements for Hayden extend through 2027 and for  
14 Craig through 2020. These agreements are between the supplier and the collective  
15 plant owners not just the Company. Failure to take the minimum contract  
16 obligations would result in liquidated damages. Additionally, the coal supply  
17 agreement for Hayden is an all requirements contract; delivery of Bridger coal to  
18 the Hayden would constitute contract breach.

19 Further, the jointly owned plants require all coal supplies to meet plant  
20 quality specifications. These quality specifications are collectively set and agreed  
21 to by the plant owners; the Company cannot arbitrarily elect to consume Bridger  
22 coal on its own account in any of the joint owned plants.

1 **Q. Are there other problems with the delivered cost of coal presented by Dr,**  
2 **Fischer in Figure 6?**

3 A. Yes. Dr. Fischer understates Bridger plant costs by failing to include any mine  
4 capital for either the Bridger surface or the Bridger underground in his analysis.  
5 The costs Dr. Fischer has graphed reflect only cash operating costs for the Bridger  
6 plant.

7 **Q. What is the magnitude of the capital expenditures for the Bridger surface**  
8 **and underground mines that Dr. Fischer has omitted?**

9 A. Mr. Link's testimony provides the capital expenditures, on a nominal basis in  
10 Confidential Exhibit RMP\_\_\_(RTL-2R). Updated mine capital expenditures over  
11 the period 2013 through 2030 average [REDACTED] per year in the 4-unit operation  
12 scenario and [REDACTED] per year in the 2-unit operation scenario.

13 **Q. In his direct testimony on page 36, lines 4 through 8, Dr. Fischer states:**

14 **In 2011, Black Butte delivered coal to Jim Bridger at an**  
15 **average price of \$1.87/MMBtu and to Valmy at \$2.87/MMBtu.**  
16 **If the differential here of approximately \$1/MMBtu is due to**  
17 **transportation cost alone, evidence indicates that Bridger mine**  
18 **could be delivered to other PacifiCorp locations at a**  
19 **competitive price to their anticipated supply costs.**

20 **Has Dr. Fischer presented any evidence to support this claim?**

21 A. No. Dr. Fischer has not provided any evidence nor is Dr. Fischer entitled to his  
22 own set of facts. Whether the \$1/MMBtu differential for the Valmy plant is  
23 related to transportation costs is entirely irrelevant to the Company's options for  
24 Bridger Coal. The actual facts cannot be misconstrued:

- 25
- Black Butte has a rail loadout facility; Bridger Coal does not.

- 1           • Valmy has a rail unloading facility; Dave Johnston is the only Company
- 2           operated plant, other than Jim Bridger, with a rail unloading facility.
- 3           • Valmy can consume Black Butte coal without any coal quality challenges;
- 4           the Company-operated plants cannot.
- 5           • The Company would incur contract liquidated damages associated with
- 6           taking Bridger coal to its coal plants; at this time Valmy would not.

7   **Q.   Can the Bridger surface mine operate at a reduced level in the two-unit**  
8   **scenario?**

9   A.   No. This could not be done economically and not without increasing the  
10   production risk of Bridger Coal’s underground mine and potentially the safety of  
11   its employees. Operation of the surface mine at a reduced level in a two-unit  
12   operation would necessitate a further reduction in the underground mine  
13   production. Due to the geological characteristics of the roof for the underground  
14   mine, the Company cannot shutdown the longwall machine, the main piece of  
15   mining equipment for the underground mine, for an extended period of time once  
16   longwall mining has commenced operation in a panel. Once a longwall panel is  
17   depleted and the longwall machine is relocated to a new panel and setup face, the  
18   Company may be able to idle the longwall machine depending on geologic  
19   conditions in the localized area and the propensity for convergence. However,  
20   idling of the longwall system, which typically produces 80-85 percent of the  
21   underground mine’s coal production, would create significant disruptions to the  
22   efficient utilization of resources and result in higher costs.

1 **Summary**

2 **Q. Please summarize your testimony.**

3 A. The updated coal costs and assumptions reflect the Company's most recent coal  
4 price projections of mine operating costs and capital costs for the captive mines as  
5 well as forward market and transportation prices. Cash operating costs have been  
6 revised to reflect updated final reclamation expenditures. These updated costs  
7 have been incorporated into the rebuttal testimony of Mr. Link.

8           Neither Mr. Falkenberg nor Dr. Fischer have presented any evidence in  
9 this proceeding to suggest that the closure of the surface operation is not the least  
10 cost alternative for the Company in the two unit operation. Rather, the Sierra Club  
11 and WIEC would propose the Company and its ratepayers absorb significant and  
12 unnecessary capital investments associated with construction of rail spurs and rail  
13 unloading capabilities, potential contract liquidated damages and the uncertainties  
14 of rail transportation costs in its efforts to avoid reclamation of the surface mine.  
15 The Company cannot make long-term decisions regarding Bridger Coal's surface  
16 operation based on such speculation.

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

18 A. Yes, it does.