BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

In the Matter of the Voluntary Request of Rocky Mountain Power for Approval of Resource Decision to Construct Selective Catalytic Reduction Systems on Jim Bridger Units 3 and 4	))))))))))	**DOCKET NO. 12-035-92** **Exhibit No. DPU 1.0 Dir** **Direct Testimony and Exhibits** **Matthew Croft**

FOR THE DIVISION OF PUBLIC UTILITIES
DEPARTMENT OF COMMERCE
STATE OF UTAH

CONFIDENTIAL

Direct Testimony of

Matthew Croft

November 30, 2012

Q. Please state your name and occupation?

A. My name is Matthew Allen Croft. I am employed by the Utah Division of Public Utilities ("Division") as a Utility Analyst.

Q. What is your business address?

A. Heber M. Wells Office Building, 160 East 300 South, Salt Lake City, Utah, 84111.

Q. Please describe your education and work experience.

A. I graduated in December of 2007 from the University of Utah with a Bachelor of Arts degree in Accounting. I completed my Masters of Accounting at the University of Utah in May 2010. I began working for the Division in July of 2007. In April 2012 I became a Certified Public Accountant, licensed in the state of Utah.

Q. Have you testified before the Commission previously?

A. Yes. I have testified in several general rate case proceedings, energy balancing account proceedings, and tax related matters before the Commission.

Q. What is the purpose of the testimony that you are now filing?

A. The purpose of my testimony is to introduce the other Division witnesses as well as state the Division's overall recommendations with regards to Rocky Mountain Power's (Company) request to construct selective catalytic reduction systems (SCR) on Jim Bridger Units 3 and 4 (Application). I will also specifically address some issues related to the Bridger mine reclamation costs included in the "Fuel" line item in Mr. Link's Exhibit 3.

Q. Will you please introduce the other Division witnesses?

A. Yes. The Division contracted with Evan's Power Consulting to assist in its review of the Company's Application. Mr. George Evans of Evans Power Consulting is testifying on behalf of the Division. Mr. Evans primarily addresses issues regarding the Company's System Optimizer Model (SO Model), after-the-fact adjustments to the SO model, and the Company's consideration of risk. Mr. Mark Crisp of Global Energy & Water Consulting also provides testimony on behalf of the Division. Mr. Crisp discusses the Company's chosen technology for addressing environmental compliance, as well as concerns regarding lack of a signed Engineering, Procurement and Construction (EPC) contract.

Q. Will you please summarize the Division's recommendations?

A. Yes. The Division witnesses raise several issues concerning the Company's analysis and choice of the SCRs. Assuming the Company can in rebuttal or supplemental testimony satisfactorily address these issues and the result of those analyses yields the same conclusion as its Application, the Division recommends that the Commission conditionally approve the Company's choice of the SCRs with final approval contingent upon final approval of an EPC contract. Mr. Evans discusses several issues with the modeling or analysis performed by the Company using its SO mode: Specifically, Mr. Evans recommends the following:

1. Revisions to the Company's SO Model so that results properly reflect actual PacifiCorp operations.
2. Removal of all after-the-fact manual adjustments to SO Model results.
3. Inclusion of the Company's most recent natural gas price forecast and wholesale market price forecast as the base case price forecast.
4. Adjustments to the low and high natural gas forecasts based on the Company's latest natural gas price forecast.
5. Corrections to errors identified by the Office through discovery.

6. A complete set of SO model results, for all nine scenarios.
7. A quantified risk-weighted result.

My own analysis and review of the Company's application raises some concerns associated with the Bridger Mine reclamation costs. Specifically, the Division recommends the following:

8. For the scenario in which all 4 units operate on coal (4 Unit scenario), the Company should provide a sinking fund calculation for the underground and surface mine reclamation that extends through 2055 or whenever the final reclamation work is expected to be substantially complete.
9. Possible adjustment to the reclamation fund contributions in the 4 Unit scenario depending on the sinking fund analysis mentioned previously.
10. As a final component in the Company's analysis, and depending on the sinking fund analysis mentioned previously, the post-2030 surface mine reclamation costs in the 4 Coal Unit scenario should be considered. These are costs that are known to exist, and appear to be significant. These costs were considered in the 2 Unit and 3 Unit scenarios but not the in the 4 Unit scenario because the analysis period stopped at the end of 2030.
11. Although rather small in terms of PVRR(d) impact, certain double counted reclamation trust fund contributions should be removed from the underground mine

costs included in the 2 Unit scenario. This adjustment reduces the Company's revised[1] base case [redacted] benefit by approximately $6 million[2].

As mentioned previously, if the Company can resolve these issues and the result of those analyses yields the same conclusion as its Application, the Division recommends that the Commission conditionally approve the Company's choice of the SCRs with final approval contingent upon final approval of an EPC contract.

Q. What conditions should the Commission consider including if it decides to conditionally approve the Company's decision?

A. As Division witness Mr. Crisp explains in his direct testimony, at this time, the Company is in the process of evaluating bids for an EPC contractor. The final contract is expected to be executed toward the end of or sometime after this proceeding is completed. Without an executed contract, unconditional approval of the Company's decision would place considerable risk on rate payers. Therefore, the Commission should condition any approval at this time on future approval of a contract that sufficiently protects the Company and its rate payers from any performance shortfalls of the EPC contractor.

Q. Can the Commission conditionally approve the Company's decision?

A. Without delving into any legal interpretation, in my opinion, Utah Code § 54-17-402 does allow the Commission to place conditions on approval of the Company's resource decision, including future evaluation of an EPC contract. Paragraph 6(b) reads ". . . the Commission

[1] The Company revised its proposed PVRR(d) benefit in OCS data request 12.3. This revision came as a result of corrections identified by the OCS.

[2] See DPU Exhibit 1.4, specifically the "Remove Excess Contributions" tab and the "Exhibit 3-PVRR Tables" tab. Note, this assumes that the "after-the-fact" adjustment methodology used by the Company is accepted by the Commission. As explained in the testimony of DPU witness Mr. George Evans, such changes or adjustments in coal cost scenarios should be considered within the SO model.

shall . . . approve all or part of the resource decision subject to conditions . . .” Of course the statue also allows the Commission to deny or approve in all or in part the Company’s resource decision.

Q. Should the Company have waited to file an application for approval of its decision until it had an EPC contract in hand?

A. Perhaps. However, a sequential process starting with the Company’s RFP for EPC contractors and ending with an order in the pre-approval process could easily take up to a year or more. Requiring an EPC bidder to honor its price and other bid features for that long would likely put the bidder in an untenable position. For example, commodity prices, as we have seen, can move substantially in a short period causing the bidder’s construction costs to also move substantially. The Company appears to have mitigated this risk and possibly enhanced the competitiveness of its bidding process by running the two processes—the RFP for EPC contractors and the pre-approval process—simultaneously. Therefore, the Division believes that conditional approval of the Company’s decision as previously discussed is a reasonable approach and would be in the public interest.

Q. Please explain why your analysis appears to have focused on reclamation costs for the Bridger mine.

A. One of the significant drivers in the PVRR differences between the 4 Unit scenario and the 2 Unit scenario is the difference in reclamation costs. According to the Company’s response to DPU data request 8.3, “the contribution of mine reclamation costs to the [redacted] PVRR(d) benefit shown in Confidential Exhibit RMP_(RTL-3) is [redacted]

Q. Why are the reclamation costs so different between the two scenarios?

A. The Office of Consumer Services (OCS) requested such an explanation in OCS data request 4.6a. Specifically, the OCS requested that the Company "describe all factors that contribute to a higher $ per mmbtu coal cost associated with the three-unit and the two-unit operation scenarios." The Company's response states[3]:

> The Company developed specific fueling plans for both a Jim Bridger three-unit and two-unit operation. The reduced mmbtu requirements resulted in the closure of the surface mine in both scenarios. Please refer to the Company's response to OCS Data Request 4.9; as evident from Attachment OCS 4.9, the main factor contributing to the higher cost in the two and three unit scenario relates to the advancement of final reclamation for the disturbed surface areas to the 2012 through 2021. Please refer to the Company's response to OCS Data Request 4.8; specifically subpart (a) for a discussion of the final reclamation requirements.
>
> In addition to the increase due to advancement of final reclamation, the underground mine's cash operating costs are higher in the two and three unit operating scenarios. The higher underground operation costs is primarily associated with a reduced underground mine production level which has resulted in higher controllable cost on a per ton basis and a corresponding increase in royalties and taxes.

Q. Will you please explain how final reclamation costs are accounted for by the Company and how those costs get passed on to rate payers?

A. Yes. The Company has set up a reclamation trust fund that will be used to pay for the reclamation work. Contributions to this fund are made each year and as time passes interest is earned. Periodically, small withdrawals are made to pay for ongoing reclamation work but the bulk of the dollars will be withdrawn once surface mining has been completed or is near completion. Ultimately however, the contributions to the fund are what get passed on to rate payers in the Bridger coal costs included in net power costs in a general rate case. Currently, there is about [redacted] in this fund. A sinking fund calculation is used to calculate end of

[3] For the attachment response to OCS 4.9 referred to in the response to OCS 4.6a, please refer to DPU Exhibit 1.1. For the response to OCS 4.8, please see DPU Exhibit 1.6

year trust balances. The Company has already provided a sinking fund analysis that extends out to 2055[4] for the 2 Unit and 3 Unit scenarios. The sinking fund analysis provided for the 4 Unit scenario, however, extends only through 2021[5].

Q. Why are the surface mine reclamation contribution costs so much lower in the 4 Unit scenario when compared to the 2 Unit scenario?

A. The Company's analysis for all scenarios extends to the end of the year 2030. Under a 4 Unit scenario, the bulk of the surface mine reclamation costs (contributions and reclamation work) will not occur until after 2030. If the Company's analysis had extended beyond 2030, the entire surface mine reclamation work could have been included in all scenarios and not just the 2 Unit and 3 Unit scenarios.

Q. Since surface mine reclamation costs will eventually be incurred and spent under any coal unit operation scenario, is it appropriate to ignore the post-2030 costs even though they don't fit within the defined analysis period?

A. Given their magnitude, it doesn't seem appropriate to ignore these costs. As previously stated, [redacted] PVRR(d) benefit of SCR installation comes from the difference in reclamation mine (surface and underground) contribution costs between the 2 Unit and 4 Unit scenario. Of that [redacted], I estimate [redacted] to be related to surface mine reclamation contributions. While the exact value of the reclamation work costs is not known, it is known that these costs will occur and that the amount will be substantial.

---

[4] For example, see Confidential DPU Exhibit 1.3. DPU Exhibit 1.3 is the Company's supplemental response to OCS 17.1. Specifically, see the "FR-Sinking Fund" tab in the "BCC Production-Operating Cost Schedules.xlsx" file which is in the "CPCN – BCC –March 7 2012" folder in DPU Exhibit 1.3

[5] See Confidential DPU Exhibit 1.3. Specifically, see the "Trust Fund" tab in the "2011-2020 BCC Production-Operating Cost Schedules (2).xlsx" file which is in the first folder level of DPU Exhibit 1.3. DPU Exhibit 1.3 is the Company's supplemental response to OCS 1.17.

Since these costs are so significant they should be considered in the Company's analysis. For example, suppose the combined impact of adjustments (based on a 2030 analysis) proposed by the Division and other parties resulted in a 4 Unit PVRR(d) benefit slightly higher than zero. At that point, and knowing that the 4 Unit scenario will have considerable surface mine reclamation costs post 2030, converting units 3 and 4 to natural gas may be the better option.

Q. If post 2030 surface mine reclamation costs were included in the 4 Unit scenario, would [redacted] be reduced to the extent that the results would favor conversion to natural gas on units 3 and 4?

A. It appears[6] that the PVRR(d) result, absent any other adjustments, would still favor the 4 Unit scenario. However, I have not been able to fully ascertain the exact net present value differences of the surface mine reclamation costs between a 2 Unit and 4 Unit scenario that extends beyond 2030. In DPU data request 8.5, I requested that the Company, "please provide an analysis that extends beyond 2030 and shows the present value differences in reclamation costs between the various unit operation scenarios." The Company's response did not provide any such analysis. The Company's response to data request 8.5 states:

> The study period, which extends through 2030, aligns with the study period used in the Company's 2011 integrated resource plan (IRP). When performing system modeling that requires an assessment of resource expansion plans, there is always potential for comparability among resources that have different asset lives regardless of the study term. To address this concern, all capital costs are converted to real levelized revenue requirement costs, which is an established methodology to account for analysis of capital

[6] According to the Company's response to DPU 8.3 (See DPU Exhibit 1.2), the PVRR of reclamation costs is [redacted] for the 2 Unit scenario and [redacted] for the 4 Unit scenario. As such, even if including post-2030 surface reclamation costs increased the [redacted] to the [redacted] the [redacted] increase would not completely offset the [redacted] included in the Company's initial filing. This assumes of course, that the "after-the-fact" adjustment methodology (as used by the Company) is accepted rather than re-running the SO model as proposed by Mr. Evans.

investments that have unequal lives and/or when it is not feasible to capture operating costs and benefits over the entire life of any given investment decision.

It's not clear how the Company's response answers the question asked, especially since approximately 94%[7] of the cash surface mine reclamation costs in the 2 Unit scenario are expenses, not capital costs, and the related reclamation fund contribution costs are not "real levelized" in the Company's analysis anyway. Even if it's not feasible to capture all operating or capital costs over the entire life of the mine, it appears the surface mine reclamation costs in the 4 Unit scenario are significant (both in terms of reclamation work and rate payer trust fund contributions) and should not be ignored.

Q. What do you recommend concerning the post-2030 surface mine reclamation costs for the 4 Unit scenario?

A. First, I recommend that the Company be required to provide a surface and underground reclamation sinking fund analysis related to the 4 Unit operation that goes through 2055 or whenever the reclamation work is expected to be substantially complete. The Company or other parties could then use this information to develop a net present value analysis, such as the one that was requested, but not provided in DPU 8.5. As mentioned previously, the Company has already provided a sinking fund analysis that extends out to 2055 for the 2 Unit and 3 Unit scenarios. For some reason the sinking fund analysis provided for the 4 Unit operation only extends through 2021.[8] It seems that a sinking fund analysis should already exist for the 4 Unit scenario, otherwise where would the contribution and withdrawal

[redacted] (the PacifiCorp share would be 2/3 of these values). These figures can be seen in rows 138 through 14, column C of the "FR-Sinking Fund" tab in the "BCC Production-Operating Cost Schedules.xlsx" file which is part of the "CPCN – BCC –March 7 2012" folder in OCS 1.17 1st Supplemental. OCS 1.17 1st Supplemental is included as Confidential DPU Exhibit 1.3.

[8] See Confidential DPU Exhibit 1.3, specifically, the "Trust Fund" tab in the "2011-2020 BCC Production-Operation Cost Schedules (2).xlsx" file in the first folder level.

estimates through 2021 come from? While the sinking fund analysis could be used to develop net present value differences in surface reclamation costs between the 2 Unit and 4 Unit scenarios, it can also be used to confirm that the level of contribution dollars currently included in the 4 Unit scenario are reasonable. It appears that the contributions that are included in the four unit scenario may be too low. For example, the cash contributions related to just the underground reclamation in the 2 Unit scenario are [redacted] (PacifiCorp share) per year from 2013 through 2037. In contrast, the total cash contributions (underground and surface) in the 4 unit scenario are only [redacted]PacifiCorp share) per year from 2012 through 2030. Based on the Company's errata "BRIDGER.xlsx" (R746-700 Confidential Workpapers) filed in the Docket 11-035-200, it appears the Company assumes the $[redacted] year contribution will continue to 2039. Generally, I would expect contributions to be higher in the 2 Unit scenario since surface reclamation work will begin prior to 2030. However, it doesn't seem to make sense that just the underground related contributions in the 2 Unit scenario (which starts in 2013) would be greater than the total contributions in the 4 Unit scenario. There may be a reasonable explanation for these contribution differences but the Company will have to provide it.

My second recommendation is that the post-2030 surface mine reclamation costs be a final component in the Company's analysis. If, after all adjustments and the most likely scenarios (CO_2 prices, gas prices, etc) are selected and the ultimate PVRR(d) favoring SCR installation is relatively small, the post-2030 surface mine reclamation fund contributions in the 4 Unit scenario should be considered. This consideration may (depending on the NPV differences in reclamation costs and other factors) suggest that conversion to natural gas is the better environmental compliance option. I do recognize that all the other costs included in the Company's analysis only extend through 2030. As such, and for comparison sake, it may initially seem inappropriate to use post-2030 costs in the analysis. However, since the surface reclamation costs and associated contributions are known to exist, and at this point appear significant, these costs should not be completely ignored simply because the "line is drawn" in 2030.

Q. Will you please explain your adjustment related to the double counted reclamation contribution costs?

A. Yes. The Company's 2 Unit scenario inadvertently double counted the amount of reclamation contributions related to the underground mine during 2019 to 2023. As explained previously, this adjustment reduces the Company's most recently revised PVRR(d) benefit [redacted] of SCR installation by approximately $6 million[9]. This adjustment was confirmed by the Company in their informal data request response set 1 in this docket. This informal response came as a result of a meeting between the Company and the Division that was requested in DPU 8.2.

Q. Can you summarize the Division's recommendation in this case?

A. Yes**.** Division witnesses in this case have raised several issues concerning the Company's analysis. These issues include modeling analysis flaws, missing scenarios or runs, lack of a quantified consideration of risk, lack of a signed EPC contract, double counting of reclamation fund contributions (2 Unit scenario), and possible understatement of reclamation fund contributions (4 Unit scenario). In the final analysis after all other adjustments are made, consideration should also be given to what appear to be significant post-2030 surface

[9] See DPU Exhibit 1.4, specifically the "Remove Excess Contributions" tab and the "Exhibit 3-PVRR Tables" tab.

reclamation contribution costs in the 4 Unit scenario. Assuming the Company can in rebuttal or supplemental testimony satisfactorily address these issues, the Division recommends that the Commission approve the Company’s choice of the SCRs conditional on final approval of an EPC contract.

Q. Does this conclude your testimony?

A. Yes