Exhibit No. DMR-1CT
Docket UE-170717
Witness: Dana M. Ralston

BEFORE THE WASHINGTON
UTILITIES AND TRANSPORTATION COMMISSION

In the Matter of PACIFIC POWER & LIGHT COMPANY, 2016 Power Cost Adjustment Mechanism	Docket UE-170717

PACIFIC POWER & LIGHT COMPANY

REDACTED REBUTTAL TESTIMONY OF DANA M. RALSTON

March 2018

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ATTACHED EXHIBITS

QUALIFICATIONS

Q. Please state your name, business address, and present position with Pacific Power & Light Company (Pacific Power or Company), a division of PacifiCorp.

A. My name is Dana M. Ralston. My business address is 1407 West North Temple, Suite 210, Salt Lake City, Utah 84116. My title is Senior Vice President of Thermal Generation and Mining at PacifiCorp.

Q. Briefly describe your education and professional experience.

A. I have a Bachelor of Science Degree in Electrical Engineering from South Dakota State University. I am currently PacifiCorp's Senior Vice President of Thermal Generation and Mining. Prior to November 2017, I was the Vice President of Coal Generation and Mining since March 2015, and Vice President of Thermal Generation from January 2010 to March 2015. For 29 years before that, I held a number of positions of increasing responsibility within Berkshire Hathaway Energy's Generation organization, including the plant manager position at the Neal Energy Center, a 1,600 megawatt generating complex. In my current role, I am responsible for operating and maintaining PacifiCorp's coal- and gas-fired generation fleet, coal fuel supply, and mining.

Q. Have you testified in previous regulatory proceedings?

A. Yes. I have testified on behalf of the Company in proceedings before the utility commissions in Utah, Oregon, Washington, and Wyoming.

PURPOSE AND SUMMARY OF TESTIMONY

Q. What is the purpose of your rebuttal testimony in this proceeding?

A. I respond to the testimony of Mr. Jason L. Ball, filed on behalf of the Staff of the

Washington Utilities and Transportation Commission (Staff), and the testimony of Mr. Bradley G. Mullins, filed on behalf of Boise White Paper, L.L.C. (Boise), challenging the prudence of Pacific Power's costs associated with the Joy longwall. I explain why the purchase of the Joy longwall by Bridger Coal Company (BCC) was prudent and how acquisition of the longwall was expected to benefit BCC operations and ultimately, customers. I discuss the unexpected and complex geologic conditions encountered in the 14th Right longwall panel that contributed to the longwall event and the subsequent recovery efforts. I demonstrate why Staff's and Boise's allegations stating the Company and BCC did not prudently manage the operation of the Joy longwall and exercised lack of care are unfounded. I explain why Boise's allegations regarding the competitiveness of BCC are incomplete and inaccurate.

Q. Please summarize your testimony.

A. My testimony:

- Explains why the Joy longwall was purchased by BCC;
- Provides information demonstrating the strategic evaluation, purchase and implementation of the Joy longwall at BCC was prudent and occurred only after technological and geological assessments were complete;
- Highlights actions taken by BCC management to inform operators of challenging geologic conditions in the 14th Right longwall panel, providing Joy longwall on-site set up and operating direction with JoyGlobal representatives prior to commencing operations, and classroom and hands-on Joy longwall training with JoyGlobal;
- Provides background information showing that the Joy longwall performance was

exceeding expectations prior to approaching cross-cut 18 in the 14th Right longwall panel;

- Discusses unexpected and severe geologic conditions encountered near cross-cut 17, the complexity and severity of those conditions, and actions taken by BCC in an attempt to resume coal production activities;
- Describes longwall recovery efforts and demonstrates that all recovery efforts deemed safe and reasonable were exhausted prior to the abandonment of the longwall;
- Discusses observations detailed in the root cause analysis investigative report prepared by BCC;
- Demonstrates that the Company's management of the Joy longwall and Bridger mine were prudent, and explains why Staff's and Boise's allegations that the Company was imprudent are unfounded;
- Explains why Staff's and Boise's lost production adjustments are unreasonable and detrimental to customers; and
- Explains why Boise's allegations concerning the competitiveness of BCC are incomplete and inaccurate.

BRIDGER COAL COMPANY

Q. Please describe BCC.

A. BCC is a joint venture that mines coal at the Jim Bridger coal mine for delivery to the adjacent Jim Bridger power plant. PacifiCorp (through its wholly-owned subsidiary Pacific Minerals, Inc.) owns a two-thirds interest in BCC, and Idaho Power Company (through its wholly-owned subsidiary Idaho Energy Resources Co.) owns a one-third

interest. PacifiCorp and Idaho Power Company have the same ownership percentages in the Jim Bridger plant as in BCC. BCC began supplying coal extracted from surface mining operations to the Jim Bridger plant in 1974.

Q. When did BCC begin development of the underground mine?

A. In 2004, BCC began developing the underground mine infrastructure using continuous miner equipment.

Q. Did the Company's original underground mine plan incorporate longwall mining techniques?

A. Yes. Longwall mining is highly productive and provides a cost benefit relative to continuous mining operations. In longwall mining operations, continuous miner section equipment provides access to large blocks of coal, referred to as panels, which can be efficiently extracted with longwall mining equipment. A contract was signed with DBT Group[1] in 2005 to construct a longwall for use at the mine. Longwall operations using the DBT longwall began in March 2007.

THE JOY LONGWALL ACQUISITION

Q. If BCC had the DBT longwall, why did BCC purchase the Joy longwall?

A. As mining at BCC's underground mine proceeded westward, the mine's coal seam thickness and coal seam structural geology variability increased. The Company confirmed this through extensive surface coal exploration programs, along with detailed in-mine geologic mapping.

The Joy longwall manufactured by JoyGlobal[2] had been in operation at the

[1] DBT Group was a German based underground mining equipment manufacturer that was acquired by Bucyrus International Inc. in 2007 which was subsequently purchased by Caterpillar Inc. in 2010.
[2] JoyGlobal Inc. is a Wisconsin based mining equipment manufacturer that was acquired by Komatsu Ltd. in 2017.

Company's Deer Creek mine in central Utah. When the Deer Creek mine was shuttered in early 2015, the Joy longwall became available to BCC, provided that technical analyses concluded the longwall could operate effectively there. The primary advantage the Joy longwall had over the DBT longwall was that the Joy longwall could operate more effectively in a thinner coal seam. The effective operating range of the DBT longwall extends from 10.5 to 12 feet while the effective operating range of the Joy longwall extends from seven to 10 feet. The lower operating height specification of the Joy longwall increased the flexibility of the longwall to overcome challenges related to coal seam thickness. The flexibility provided by the Joy longwall also decreased the run-of-mine ash content of coal produced.

Q. Mr. Mullins's testimony states "PacifiCorp did not yet believe the alternative of transferring the Joy Longwall to be viable" in December 2014 and subsequently changed its mind.[3] Is this statement accurate?

A. No. As indicated in the Joy longwall justification memo and capital appropriation document,[4] the Company began evaluating the merits of using the Joy longwall at BCC in early 2014 and concluded by the summer of 2015 that the Joy longwall would provide operating and cost benefits to BCC and customers.

Q. Before BCC purchased the Joy longwall, did BCC and the Company complete an evaluation to determine whether the Joy longwall could successfully operate in the known geologic conditions at BCC?

A. Yes. The Company's and BCC's technical groups (engineering and geology) with the

[3] Boise Exhibit BGM-1CT, page 19, lines 12-13.

[4] Boise Exhibit BGM-5C, page 34 of 60.

assistance of JoyGlobal and Malecki Technologies Inc. (MTI), a geotechnical engineering consultant, evaluated the potential benefits of using the Joy longwall at BCC. This evaluation directly compared specifications of each longwall system (the DBT and the Joy) and determined the potential viability of the Joy longwall system relative to BCC's coal reserve and the known geological conditions. Key specification factors were compared between the DBT longwall and the Joy longwall. The group concluded the Joy longwall would provide operational benefits with regard to tip-to-face distance, floor pressure, and range of operating cutting height.

In addition, the Company evaluated the effective remaining life of the Joy system (number of cycles), and concluded that the Joy longwall could be utilized by BCC through the Joy's expected life.

Q. Mr. Mullins alleges that the Company "has not provided any evidence of having conducted any geological assessment associated with transferring the Joy Longwall prior to the time it made the decision to transfer the Joy Longwall."[5] Is this correct?

A. No. Boise asked this precise question during discovery to which the Company responded. The evidence provided to Mr. Mullins's as a result of his data request is repeated here as follows.

> "Confidential Attachment Boise 004-5 [the Joy longwall justification memo][6] discusses the geologic challenges in the Western mine district and the expected benefits of utilizing the Joy longwall versus the DBT longwall in that area. On page 5 of Confidential Attachment Boise 004-5, the plan assumed utilizing the Joy longwall to extract coal from the remainder of the western district and the first panel mined (6th Left) in the eastern district because the Joy longwall has a lower minimum cutting height

[5] Boise Exhibit BGM-1CT page 21, lines 4-6.
[6] Boise Exhibits BGM-5C and BGM-11C

> relative to the DBT longwall. Page 8 visually portrays a significantly higher ash coal product being mined by the DBT longwall relative to the Joy longwall on page 9. This is evident by the amount of red in the top left quadrant of Figure 2 on page 8 versus the amount of green in the top left quadrant of Figure 3 on page 9. The color red designates an ash content of greater than 15.0 percent. The color green designates an ash content of less the 12.5 percent."[7]

Mr. Mullins's claim that the Company has not provided evidence of or completed any geological assessments prior to making the decision to purchase the Joy longwall is incorrect.

THE JOY LONGWALL – 14TH RIGHT PANEL

Q. Did the Company and BCC develop a specific geologic longwall report for the 14th Right longwall panel?

A. Yes. Consistent with established geologic procedures, BCC develops a comprehensive geologic report for each longwall panel. The report for the 14th Right panel, included as Confidential Exhibit DMR-2C, documents geologic, hydrologic, geotechnical and coal quality projections of each longwall panel. To develop the report, Company and BCC geologic staff conducted detailed geologic in-mine mapping of each gateroad and the setup entries. Data mapped included coal thickness, coal quality - channel samples, roof and floor geology, hydrologic characteristics, general mining conditions, and geotechnical information. In addition, extensive surface exploration data was used to detail mid-panel geologic trends and longwall extraction conditions.

[7] Boise Exhibit BGM-4 page 10-11, (v).

Q. Was the report based on comprehensive data that was analyzed and presented by professional experts?

A. Yes. The longwall panel report was prepared by licensed professional geologists experienced in underground coal mining geology.

Q. Were the contents of the 14th Right longwall report discussed with mine management and longwall section supervisors?

A. Yes. The report was provided to and discussed with mine personnel before mining the longwall panel. In addition, the BCC mine geologist visited the longwall face 22 times from September 3, 2015, to December 17, 2015, to conduct geological surveys. The surveys document coal thickness, coal quality, roof and floor geology, hydrologic characteristics, and general mining conditions. During this process, the geologist discussed the results of the surveys with the shearer operators, the longwall coordinator, and the foremen. Survey results are communicated to mine management. This process is consistent with standard industry practice.

Q. Did any known gaps or voids exist in the data used to develop the detailed longwall mining report for the 14th Right panel?

A. No. BCC conducted extensive geologic investigations prior to the 14th Right extraction, including extensive surface exploration drilling to define regional and in-panel thickness trends and lithologic characteristics of the roof and floor and in-mine detailed geologic mapping of all entries to enhance the regional trends data. All of the data from exploration and in-mine mapping was incorporated into the overall geologic model to predict general mining conditions.

Q. You state there were no known gaps or voids in the data for developing the report. Does the Company have the ability to determine with 100 percent certainty all existing localized geologic conditions?

A. No. While the Company conducts extensive drilling and core sampling in the coal reserve, it is impractical and unreasonable to drill to determine with 100 percent certainty all existing geologic conditions. The industry standard consists of drilling holes every quarter of a mile. The drill holes at BCC are approximately every eighth of a mile in the location in question, which is significantly above the industry standard.

Q. Based on the information available to BCC relative to specific geologic conditions in the area and the favorable operational evaluation developed by JoyGlobal, did BCC have confidence the 14th Right longwall panel could be successfully mined using the Joy longwall?

A. Yes. BCC personnel with assistance of MTI, the geotechnical engineering consultant, and JoyGlobal concluded the Joy longwall would provide operating benefits at BCC, especially with the longwall's ability to operate in lower coal seam heights than the DBT longwall. A detailed 14th Right longwall report using the data previously mentioned was developed and discussed with mine personnel. Based on the 14th Right report, BCC determined that the Joy longwall could safely and effectively mine this panel.

Q. Did the Company have employees at BCC who were experienced in operating a Joy longwall?

A. Yes. Four shearer operators at BCC had extensive operational experience with the

Joy longwall (five or more years) at the Deer Creek mine. In addition, two other employees had experience operating a Joy longwall system from another mine. Thus of the two shifts (team of seven crew members) working in December 2015, approximately 43 percent of the employees had prior experience operating a Joy longwall system.

Q. What steps did the Company take to ensure the mining crews were adequately trained on the Joy longwall operation?

A. As stated previously, the geologic longwall report was provided to mine personnel prior to mining operations beginning in the 14th Right panel. Management employees and geologists also provided verbal instructions to all longwall section employees of the known geological issues and challenges. In addition, JoyGlobal was on site starting August 25, 2015, to assist with the longwall set up and provide technical direction to 30 crew members on the operation of the longwall prior to the longwall commencing operations on August 31, 2015. Further, JoyGlobal conducted classroom and hands-on Joy longwall training while the longwall was in actual operation for mine personnel during September 12, 2015, through October 9, 2015, to ensure longwall section employees could confidently operate the Joy longwall. Finally, operational manuals for major longwall section components were available as a reference for employees.

Q. Staff alleges that the Company "[redacted]"[8]

Do you agree with this statement?

A. No. The mine plan that was in place was appropriate for the expected mining conditions. Management and longwall crews were aware of the risks associated with mining completely through the hard sandstone floor. The geological report highlighted this risk by documenting that a [redacted] as discussed in the 14th Right Longwall Panel Geologic Report.[9] BCC management prudently evaluated the risk of operating the Joy longwall in the 14th Right area of the mine given the known geologic and geo-technical environment. It is important to note, the longwall crew encountered unexpected and extraordinary localized geological features in the middle of the longwall panel [redacted]. This also conflicts with Mr. Mullins assertion that [redacted]"[10]

Q. Please describe the unexpected localized geologic features that impeded the Joy longwall's ability to move or retreat.

A. As the mine approached cross-cut 18 in the 14th Right longwall panel in December 2015, the Joy longwall intercepted two unexpected geologic features simultaneously, a mid-panel coal seam thinning trend and severe geologic structural

[8] Staff Exhibit JLB-1CT, page 3, lines 1-2.
[9] Exhibit DMR-2C, page 5.
[10] Boise Exhibit BGM-1CT, page 22, line 12.

rolls in the floor. The detailed mine map included in page 23 of Exhibit DMR-2C projected a coal seam thickness of approximately eight to eleven feet in this area, which is well within the operating limits of the Joy longwall. However, the coal seam unexpectedly thinned to approximately six and a half feet thick at mid-face. The combination of the rapidly thinning coal seam and severity of the multi-dimensional structural rolls (parallel and perpendicular to the longwall face) in the floor forced equipment operators to alter the mining horizon to limit contact with the hard sandstone floor (shown in Exhibits DMR-4C and DMR-5). The severity of the structural rolls increased as the longwall retreated towards cross-cut 17. In addition, the hard sandstone floor, normally approximately two feet thick, thinned at the crowns of the structural rolls to less than one foot thick. The combination of the thinning coal seam, thinning sandstone floor and severity of the structural rolls exceeded the capacity of the shearer to maneuver through the coal face without trimming into the hard sandstone floor and the roof.

Q. Did the longwall foreman and shearer operators "[redacted]" into the floor as indicated in the Mine Safety and Health Administration (MSHA) Field Investigation report?[11]

A. No. As stated in the Company's root cause analysis report, [redacted].

[11] Boise Exhibit BGM-8C, page 2.
[12] Staff Exhibit JLB-3C, page 9, "Root Cause Analysis" section.

Q. Was the Company aware that the coal seam height would decrease below seven feet at the same time that a multi-dimensional roll would occur?

A. No. When the Company requested that Staff identify any reference of the possibility of this event occurring, Mr. Ball's response was he "[redacted]".[13]

Q. Mr. Mullins's testimony states "PacifiCorp's strategy of using the Joy Longwall to access areas of the Bridger Underground mine with low coal seam height ultimately failed."[14] Do you agree with this statement?

A. No. With the documented variability in the mine's reserves, the Joy longwall provided operational flexibility and advantages over the DBT longwall and was not a strategic failure. Coal thickness projections of the 14th Right longwall panel were within the operating specifications of the Joy longwall. The Joy longwall intercepted an unknown geologic situation both in terms of coal seam thickness and structural geology. Detailed geologic in-mine mapping along with extensive surface drilling exploration did not identify the severe nature of the coal seam at this location. Coal thickness measurements along the headgate and tailgate and surface exploration in the vicinity were within the operating range of the Joy longwall.

Q. Mr. Mullins alleges that "[redacted]". [15] Is this correct?

A. No. Longwall face profile shift reports were completed by foremen and submitted to management every shift. Geologists also recorded notes on site which were compiled

[13] Exhibit DMR-8C, (Data Request No. 3).
[14] Boise Exhibit BGM-1CT, page 4, lines 18-19.
[15] Boise Exhibit BGM-1CT, page 23, lines 8-9.

into geologic mapping models, and reported to management on a consistent basis.

Q. Did Mr. Mullins misinterpret the Company's geologic notes and make the incorrect allegation that "[redacted]"?[16]

A. Yes. It is prudent mining practice when dealing with a thinning coal seam to mine to the coal floor to minimize the amount of ash (from roof rock). At times this would involve mining into the hard sandstone floor pan but not through it. This is not "risky activity" but standard mining practice. Mr. Mullins's inexperience with mining led him to an erroneous conclusion. The 14th Right Geologic Report specifically states [redacted], it does not state to avoid cutting into the hard sandstone floor.

Q. Mr. Mullins alleges that "[redacted]" on December 15, 2015, and December 23, 2015.[17] Do you agree with this assertion?

A. No. As recorded in the longwall face profile reports and the geologist notes, the Company took corrective measures to [redacted][18]

- [redacted]
- [redacted]

[16] Boise Exhibit BGM-1CT, page 23, lines 11-12.
[17] Boise Exhibit BGM-1CT, page 24, lines 5-6, 9-10.
[18] Boise Exhibit BGM-4, page 25.

- [redacted]

[redacted]

- [redacted]

[redacted]

[redacted]

This record is an indication that the Company was making corrections to prevent exposing the claystone.

Q. Please explain what corrective actions BCC took to navigate through the complex and rapidly changing geologic conditions.

A. At times during December, longwall crews were able to alter the mining horizon to effectively stay within the coal seam and limit incidental contact with the hard sandstone floor. Crews attempted to alter the longwall mining horizon by changing the cutting angle of the shearer to overcome the structural rolls. These actions were consistent with the normal practice of longwall crews, who continuously evaluate mining conditions encountered (coal seam thickness trends and structural features) along the face and attempt corrective measures to mitigate the changing mining environment.

Q. Briefly describe operating limitations that longwall section equipment has relative to rapidly changing geological conditions.

A**.** The longwall is a large, highly mechanized piece of equipment with some flexibility to navigate various geologic features including changes in seam thickness and structural changes. However, in the case of the 14th Right longwall panel, the severity of the rolls in conjunction with the thinning seam exceeded the capacity of the shearer

to navigate through without trimming both the hard sandstone floor and the roof. When the rolls are extremely severe as in the case of 14th Right, sections of the roof and floor must sometimes be removed for clearance as the shearer traverses along the face of the coal seam, especially at the transition zones of the structural rolls.

Q. Please describe the operational and production performance of the Joy longwall prior to December 2015.

A. The Joy longwall exceeded expectations in terms of productivity and was consistent with projected coal quality. For the period from startup on August 31, 2015, to the end of November 2015, productivity of the Joy longwall exceeded each of the measured metrics (budgeted tonnage by [redacted] percent, budgeted feet advanced by [redacted] percent, budgeted tons/shift by [redacted] percent and budgeted feet/work shift by [redacted] percent). Quality of coal produced from September through November from the Joy longwall (14th Right panel) averaged [redacted] percent ash which was below the Jim Bridger plant target delivery specification of [redacted] percent ash.

Q. Do you agree with Mr. Mullins's repeated statements the Company failed to take adequate preventative action and exercised lack of care?

A. No. Mr. Mullins notes that "no geologist visited the coal face for sixteen days"[19] after the Joy longwall problems occurred and interprets this as "lack of care" by the Company.[20] Importantly, the role of the geologist is to model and predict upcoming mining conditions when developing new sections of the mine. The geologist uses actual field measurements and data to validate and make adjustments to improve the accuracy of the model when the field data supports it. The model results are then

[19] Boise Exhibit BGM-1CT, page 27, lines 18-19.
[20] Boise Exhibit BGM-1CT, page 28, line 16.

used to develop geological reports for the operating crews and management to determine the best course of action when developing mine plans. A geologist's expertise is in developing these models and collecting field data, not on actual mining operations or operating the mining equipment. The personnel best suited for operation of the equipment are the mine's operating crews.

Even with this understanding, the geologist visited the longwall face 22 times from September 3, 2015, to December 17, 2015. The Joy longwall problems occurred on or about December 23, 2015. The geologist visited the longwall face again on January 8, 2016. From December 23, 2015, through January 7, 2016, BCC had experienced mine personnel on the longwall face 24 hours per day monitoring conditions and providing updated information to BCC senior management personnel. At this juncture, operational expertise was required to improve conditions on the face as employees grasped the challenging geologic conditions at hand. In addition, individuals not directly involved in mitigating longwall face conditions (such as a geologist) were discouraged from accessing the area due to safety concerns. Crews were actively working to manually remove waste material that had caved on the face, remove frozen material from the stacking tubes, make necessary longwall mechanical repairs, reposition shields, and support shields with hydraulic cylinders (dukes) where necessary.

Q. Please respond to Mr. Mullins's assertion that no "geological monitoring [was] undertaken after December 17, 2015".[21]

A Geological monitoring is not limited to just geologists, but is also provided by trained

[21] Boise Exhibit BGM-1CT, page 27, lines 5-7.

and experienced longwall operations personnel and by management observations.

Q. Please respond to Mr. Mullins's statement that "If one were to conclude that the geological conditions were too challenging to be mined effectively by the Joy longwall, even with the support of geological staff, that speaks to the lack of care exercised by PacifiCorp."[22]

A. With the benefit of hindsight and the selective use of Company produced analysis and reports, Mr. Mullins suggests the geological conditions were too challenging for the Joy longwall to successfully mine. Mr. Mullins's conclusions are contrary to those reached by mining experts from the Company and JoyGlobal. What Mr. Mullins fails to recognize is that the issue is not the operational viability of the Joy longwall, but rather the complex localized geologic conditions, the inability of longwall mining equipment to make abrupt operational changes, and the ability of longwall section personnel to completely understand the heretofore unknown conditions of the rapidly thinning coal seam and multi-dimensional structural roll, which hindered the ability to respond.

The Company's engineering, geological, and operational employees carefully evaluated the Joy longwall before BCC acquired it. The technical evaluation completed by JoyGlobal in 2014 concluded that in addition to the lower minimum cutting height provided by the Joy longwall, the Joy longwall provided operational benefits. BCC made its decision to purchase the Joy longwall after JoyGlobal completed its technical assessment of the geotechnical characteristics at the mine and the operational design of the longwall.

[22] Boise Exhibit BGM-1CT, page 29, lines 3-5.

Q. Please respond to Mr. Mullins assertion that "Prior to the incident with the Joy Longwall, PacifiCorp had virtually no geological controls in place associated with longwall operations".[23]

A. Since the inception of the underground mine, BCC has maintained and still maintains geologic controls. Collectively, PacifiCorp and BCC's geologic and engineering staff has over 50 years of geologic experience with special emphasis on underground coal mine geology and mining applications. Geologic controls in place at the BCC underground mine include: extensive geologic surface mapping (jointing and structural features), detailed surface exploration programs (drilling programs – rotary and coring), geotechnical assessments, hydrologic modeling and analysis, and continuous in-mine geologic mapping. Data collected is analyzed to develop a comprehensive model of geologic depositions to evaluate the complex nature of the underground mine. This information is discussed with operational personnel and included in reports such as the "14th Right Longwall Panel Geologic Report" dated August 2015. Topics discussed in the referenced 14th Right longwall panel report are noted below:

- Summary
- Coal Seam Characteristics (thickness, seam makeup)
- Roof and Floor Lithology
- Other Geologic Features (structure, jointing, faulting)
- Overburden/Abutment Stress
- Groundwater
- Headgate and Tailgate Stability
- Geology of the Extraction Face
- Ash Prediction
- Appendices:
  - Coal Sample Data

[23] Boise Exhibit BGM-1CT, page 29, lines 11-12.

- Longwall Panel Geology Map (identifies coal seam thickness and roof lithology – areas overlain with sandstone, mudstone and/or siltstone, wet areas, kettle bottoms, tree impressions)
- Longwall Panel Ash and Coal Quality Map
- Longwall Panel Mine Floor Elevation and Overburden Thickness Map

Longwall panel reports have been developed and discussed with mine management personnel since the inception of the underground mine. Mr. Mullins's assertion that BCC did not have geologic controls in place prior to the Joy longwall incident is inaccurate, and not based on factual the evidence provided to Mr. Mullins.

Q. Based on your review of Exhibit BGM-15 discussing Bowie Resources (Bowie) geological controls, were Bowie geological controls more robust or prudent than those utilized at BCC's underground mine?

A. No. The referenced document was presented in August 2006 and described Bowie geology and ground control practices with specific focus on geologic data collection and dissemination of information to all mine employees. On page 3 of Exhibit BGM-15, the paper states the "geologic data base is considered a living entity, that grows and changes as new information is collected". As previously discussed, BCC gathers the same type of information as Bowie and inputs the data into a comprehensive geologic depositional model that is continually updated. Data collected is used to develop not only longwall mining reports, but detailed mine plans including coal quality projections. Mr. Mullins incorrectly stated "it is not normal for an underground mine to lack specific geological controls, as was the case at the Bridger Underground Mine prior to the Joy Longwall failure".[24]

On page 4 of Exhibit BGM-15, Bowie states "the most unique element of the

[24] Boise Exhibit BGM-1CT, page 29, lines 17-19.

ground control program at Bowie is the collection of the roof bolter lith-graphs" and then discusses how the data is included in the geologic data base by a geologist. BCC's underground mine conducts test hole drilling in development entries using roof bolters but does not develop lith-graphs because of the unique geology at the mine. This is due to the relative soft strata that overlies the coal seam, which renders geologic data gathering using this method unreliable if not impossible. BCC instead gathers this type of data using rotary and coring drilling programs.

Bowie further discusses how information contained on the lith-graphs is discussed with section foreman at least once per day and with key mine personnel in weekly quality meetings. The communication process is very similar to practices at BCC. Shift reports are prepared by section foreman and contain data summarizing productivity information, safety topics discussed or issues, observations (including roof bolter test hole data), etc. Typically, out-going crews verbally inform the on-coming crew of relevant issues and observations for each section. BCC's underground mine geologists visit mine operating sections to formulate professional observations and discuss observations with operating personnel on the spot. This information is documented and discussed with mine management. Each morning, prior to start of the shift, management employees meet and discuss operational issues and concerns. Plans are developed to mitigate challenges and meet targets. Generally, senior mine personnel have daily conversations with Jim Bridger plant personnel and monthly meetings to discuss coal delivery requirements including coal quality.

Q. Did the Company and BCC investigate the circumstances surrounding the abandonment of the Joy longwall?

A. Yes. The Company and BCC completed an in-depth root cause analysis and prepared the report titled "FINAL Report of Investigation – Joy Longwall 14th Right Investigation," dated October 13, 2016, shortly after the decision was made to stop the longwall recovery efforts.[25]

Q. Please highlight the findings in the root cause analysis report.

A. Notably, the report was compiled after individual interviews with longwall section and mine management employees occurred. A major purpose of the root cause analysis report was to identify areas of improvement and not necessarily to assign fault. Several combined root cause analysis meetings were held with BCC, Idaho Power, and PacifiCorp representatives. Information gathered during this process is contained in the report. The report identified the following seven items as reasons contributing to the unexpected Joy longwall event;

1. The coal seam thickness thinned and a mid-face structural roll was encountered simultaneously.
2. Although crews were trained extensively and several had previously operated the Joy longwall at the Deer Creek mine, operating this longwall in the unique geological conditions at BCC was new to all employees.
3. Shearer operators cut into the hard sandstone floor to control roof caving and minimize ash contamination and did not adequately communicate issues to management employees.

[25] Staff Exhibit JLB-3C.

4. The thinning coal seam forced the shearer operator to cut the crown that was caused by a pronounced roll to maintain the cutting height required to allow the shearer to pass the shields. This resulted in the shearer exposing structurally incompetent claystone.
5. Longwall crews did not follow consistent operating practices (spotting shields and climbing out of the claystone).
6. The crews had to manually remove material that had fallen from the roof on the face conveyor (pan) resulting in excessive downtime.
7. While equipment was maintained properly, unplanned mechanical downtime occurred.

The report also discusses challenges associated with geology, hydrology, scheduling adjustments, and a reduced available workforce driven by the holiday period, unexpected mechanical downtime, inconsistent operating practices and communication, and the absence of written procedures for cutting the hard sandstone floor and catching top rock.

Q. Were written operating procedures in place at the BCC underground mine and were these procedures followed as reasonably as possible per the 14th Right Geological Report?

A. Yes. The Company successfully followed operating procedures with favorable results until the unknown events of the thinning seam, multidimensional roll, and thin floor exceeded the capacity of the Joy longwall to maneuver. The Company's root cause analysis states "[redacted]"[26]. The Company did

[26] Staff Exhibit JLB-1CT, page 16, line 7

not have specific procedures for an unknown, unexpected, catastrophic event. While it is prudent to review and adjust from past events, it is extremely difficult or impossible to have a written process for an unforeseen event so severe that there is no industry guidance. The longwall event was an anomaly to the mining industry and there was no industry experience or history to draw upon.

Q. Staff alleges that the "[redacted][redacted]"[27] Do you agree?

A. No. During longwall mining, it is critical that a longwall regularly move or retreat while mining the panel to avoid or minimize convergence of the roof and floor and unstable roof conditions. Based on the geologic reports, the Company's management scheduled appropriate levels of staff for the anticipated geological conditions during December 2015. When conditions deteriorated, additional employees were called to supplement the base staffing levels but due to the holiday period, only a small number of employees were available. The staffing levels were appropriate and prudent for the expected conditions.

Q. Please explain why the longwall could not move at a steady rate in December 2015.

A. During the timeframe of December 23, 2015, to December 29, 2015, the underground mine experienced significant operational issues such as roof flushing, frozen stacking tubes, and mechanical problems that prevented the longwall from moving. Most notably, longwall crews were faced with rocks flushing or falling from the roof at the longwall mine face due to the poor roof conditions. The flushing caused downtime

[27] Staff Exhibit JLB-1CT, page 16, lines 14-16.

and slowing of the mining process because crews needed to manually move rocks that overflowed the conveyor. The rocks were then moved back into the pan and conveyed out of the mine. The combination of convergence and interception of soft claystone rock pushed the shearer in the floor. Additionally, the stacking tubes at the surface of the underground mine were frozen solid with coal for a time due to extremely cold weather. The frozen stacking tubes prevented the conveyor system from operating effectively.

Q. Please give further details about the eight items listed in the "Methods to Prevent a Reoccurrence"[28] section of the root cause analysis report.

A. As described below, the majority of the items discussed in the "Methods to Prevent a Reoccurrence" section emphasize a need to improve existing practices and/or procedures as opposed to an absence of procedures that are standard in the industry.

1. Written longwall standards. Formal written longwall procedures have been in-place since longwall operations began at the underground mine in March 2007. Additionally, written standards were formalized in August 2017 and continue to be refined.
2. Additional geologic training. Historically, geologic longwall reports were developed and provided to management employees. Maps identifying coal seam thickness contours, roof lithology, drilling data, etc. were provided to all longwall section employees and verbal discussions occurred on an as needed basis. However, a written Longwall Standards document was developed after the Joy longwall event that requires all longwall section employees meet with Company

[28] Staff Exhibit JLB-3C, page 10-11

geologists for training prior to coal extraction from a new longwall panel and as changing geologic conditions dictate.

3. Expanded geologic operating plans. Historically, operating plans were developed and discussed with all longwall section employees and mine management personnel based on discussions and input from Company geologists. However, the Longwall Standards document formalizes the communication process (both verbal and written) between operators, longwall section staff (management and union) and geologists.

4. Shearer operator communication. Historically, shearer operators have verbally communicated with each other, foreman and geologists regarding operational issues. However, the Longwall Standards document formalized the communication process to be both verbal and written.

5. Shift change communication. Historically, operators verbally communicated operational and geological conditions to the on-coming shift and prepared written production reports. The written production reports were not always reviewed by on-coming shift supervisors. The Longwall Standards document requires operators and supervisors to provide written reports to on-coming crews to ensure complete and accurate information is provided to shift supervisors.

6. Supervisor documentation. Historically, supervisors have evaluated changing face conditions, made operating adjustments, and verbally communicated changes to other longwall employees. The Longwall Standards document requires supervisors to document changing conditions in production reports.

7. Mechanical availability. The referenced report states that “while equipment was

being maintained properly, unplanned mechanical downtime resulted in the inability to run the longwall during the initial timing of the event". The Company recognized that not having a spare part contributed to several hours of downtime during the longwall event. The Company has reviewed and updated the critical spare longwall parts list to mitigate mechanical delays and the Longwall Standards document requires all longwall employees to report mechanical problems to maintenance personnel immediately to ensure timely repairs occur.

8. Adequate staffing levels. Historically, operating shifts at the mine were reduced from two to one shift per operating day during extended holiday periods. This practice did not create operational issues prior to the 14th Right longwall event. In December 2015, the Company followed call-out procedures contained in the collective bargaining agreement but represented employees declined to work unscheduled shifts. Therefore, the Company is now scheduling more employees to work during holiday periods when conditions warrant and attempts to manage coal production activities to avoid longwall moves over extended holiday periods. In addition, the Company signed a Memorandum of Agreement with the union to provide enhanced workforce coverage during longwall move periods.

Q. Why did the Company perform an investigation?

A. The Company considered it important to understand the events and issues that resulted in the abandonment of the Joy longwall and to develop actions to prevent a future occurrence. While the Company's actions were prudent with respect to the purchase, use, and recovery attempts of the longwall, the root cause analysis was done with a critical view in an effort to continuously improve operations.

Q. Was a root cause analysis performed by an independent contractor for the circumstances surrounding the abandonment of the Joy longwall?

A. No. Initially, all efforts were focused on safely restoring the Joy longwall's ability to resume coal production activities. As longwall recovery efforts occurred, an understanding of the unexpected, complex geologic conditions became clear, and the Company concluded it had the capability to conduct the review internally, consistent with the Company's normal practice. In response to the issues raised in this case, the Company's independent expert, Dr. Rob Thomas, has now reviewed the Company's actions in conjunction with the Joy longwall and confirmed that they were consistent with mining industry standards.

Q. Is Staff's assertion reasonable that a written plan of communication would have prevented the Joy longwall loss?

A. No. As stated in Mr. Ball's testimony, the Company responded "that verbal exchanges occurred consistent with industry practice".[29] To assign the lack of a formal communication plan as a direct cause of loss is far reaching and unreasonable.

JOY LONGWALL RECOVERY EFFORTS

Q. Please summarize Joy longwall recovery efforts.

A. The longwall recovery efforts were conducted over a nine-month period using traditional and state-of-the art technologies.[30] Not all the methods discussed and evaluated were attempted due to safety and operational concerns. Longwall recovery efforts were discussed with experienced mine personnel, industry experts, vendors and MSHA. Recovery methods used included:

[29] Staff Exhibit JLB-1CT, Page 18
[30] Exhibit DMR-6C, pages 1-8.

- Pumped grout from the surface to an area above the shields to consolidate roof material.
- Pumped a chemical into the floor to fill voids and increase compressive strength.
- Pumped various types of foams, chemicals, and grouts above and below the shields from the longwall face to fill voids and consolidate roof material.
- Installed wooden crib blocks underneath the shields to stabilize floor conditions.
- Pumped various types of glue into the face to consolidate and stabilize face conditions.
- Installed one inch by ten foot long re-bar at an angle near the top of the shields to provide additional structural face support.
- Horizontally drilled holes under the shields and face conveyor and then circulated a refrigerant to freeze and stabilize the floor.
- Took taper cuts with the shearer in the headgate area to reduce abutment pressures on the face.
- Constructed plywood beams to form structural bridges to distribute shield floor loading.

Q. Please describe the Company's decision-making process for deciding to begin recovery of the Joy longwall?

A. The Company was faced with an unprecedented situation with the longwall crisis in December 2015. Management believed that the longwall could be recovered and immediately began to plan a way to recover the Joy longwall. The nature of the

recovery operations required real-time decisions in a rapidly changing environment and required immediate action.

Q. Did the Company document management's involvement in the recovery efforts between December 2015 and October 2016?

A. Yes. As discussed in the timeline of recovery efforts attached here as Confidential Exhibit DMR-6C, BCC management coordinated with Idaho Power Company and PacifiCorp representatives to ensure information was provided timely and specific methods used were being incorporated into the overall strategy and recovery efforts. Further, PacifiCorp senior management had phone calls several times each week and periodic on-site visits with mine management to assess and discuss progress and challenges. Additionally, the Joy longwall recovery efforts were discussed in the Management Committee Meetings for the Bridger Coal Company. These minutes were provided to parties.

Q. Did BCC solicit input from industry experts to ensure all reasonable recovery techniques were considered?

A. Yes. BCC solicited input and services from industry experts, contractors, mine operators, and MSHA in an effort to safely and effectively recover the Joy longwall and resume production activities. Please refer to Confidential Exhibit DMR-6C for documentation of industry experts consulted.

Q. At what point and why did the Company determine the Joy longwall was to be abandoned in place?

A. On Friday, October 7, 2016, the recovery effort for retrieval of the Joy longwall was terminated due to safety concerns. The roof caved in the 14th Right section near

shield 57, blocking access to four shields. This created a situation where a secondary escape-way was unavailable, triggering an unsafe condition, and personnel were removed from the area. At this point additional efforts to recover the longwall were deemed to be unsafe.

A call was made to PacifiCorp management (including the Company president) on October 7, 2016, to explain the situation. All parties agreed that additional efforts to recover the longwall would pose too great a risk to personnel. Idaho Power representatives were contacted the same day and the situation was also discussed. MSHA was also contacted on October 7, 2016, and informed of the situation and mine inspectors arrived on October 10, 2016. MSHA inspected the area and issued a Control Order pursuant to Section 103(k)[31] prohibiting access to any unsafe area of the mine which validated management's safety concerns. On October 10, 2016, management personnel traveled to the mine and inspected the longwall face. Idaho Power Company and PacifiCorp personnel concurred with the decision to abandon the recovery efforts for the Joy longwall due to safety concerns.[32] Refer to the "Joy Longwall Chronological Recovery Effort Summary 14th Right December 2015 – October 2016" included as Confidential Exhibit DMR-6C for further details of management's involvement in the recovery and abandonment efforts.

[31] Exhibit DMR-7C.
[32] Exhibit DMR-6C, page 8

Q. Do you agree with Staff's conclusion that it is not possible to "know the extent to which abandonment may have been reasonable because of the lack of documentation"[33]?

A. No. As described above, a portion of the roof caved in the 14th Right longwall panel on Friday, October 7, 2016. This presented immediate safety concerns, which resulted in the decision being made via phone conversations with management to abandon the longwall. This was subsequently documented with the Control Order from MSHA on Monday, October 10, 2016, as stated above. The safety of the mine's employees took priority over the recovery of the Joy longwall in extremely unsafe conditions.

Q. Mr. Mullins cites to his experience with BCC from mining workshops conducted by PacifiCorp in Oregon.[34] Do you have experience with these workshops?

A. Yes. These workshops were high-level fueling plan conversations, not detailed mining plans or geologic discussions.

Q. Would these workshops have provided Mr. Mullins strong expertise in understanding the geology and concerns related to underground longwall mining at BCC?

A. No.

Q. In your opinion, was the Company prudent in its actions related to the Joy longwall's operation or recovery efforts?

A. Yes. The Company's actions were reasonable and consistent with industry standards in evaluating the use of the Joy longwall, predicting mining conditions, training

[33] Staff Exhibit JLB-1CT, Page 21, lines 7-8.
[34] Exhibit DMR-9 (Boise Data Request No. 1)

Company employees, operating the longwall, and working to recover the longwall using several techniques and outside resources.

Staff and Boise selectively rely on the Company's root cause analysis, without considering the situation in its entirety, the inherent challenges in longwall mining, or on a mining expert's opinion. When all the information is taken into account, the Company's actions were prudent and recovery of the Joy longwall expenses should be recovered.

DECREASED COAL PRODUCTION ADJUSTMENT

Q. Are the lost coal production adjustments proposed by Staff and Mr. Mullins reasonable?

A. No. The assertion that the increased power production costs at Jim Bridger plant during the Deferral Period of 2016 was due to the lack of coal production connected to the Joy longwall is incorrect. As described in Mr. Wilding's rebuttal testimony, market conditions during 2016 included historically low power and natural gas prices. Power generation from coal plants was dramatically lower throughout the United States, including the PacifiCorp system. Lower-priced alternative sources to coal power generation were available to the Company and therefore generation levels at the Company's coal units, including the Jim Bridger plant were lower. Had the longwall event not occurred, the Company would have been required to reduce coal mining at BCC due to sharply reduced coal fired generation requirements in 2016. The prudent course of action for the Company to take was to reduce overall power costs and save customers money by taking advantage of market conditions.

Regrettably, Mr. Mullins's Exhibit BGM-3C and Mr. Ball's Confidential Figure 2[35] are only focusing on the coal costs at the underground mine, not the overall system benefits of such actions.

Q. Mr. Mullins notes that the DBT longwall did not return to service until August 2016, eight months after the Joy longwall ceased operations. He claims that this delay in active longwall mining at BCC unreasonably increased costs. Is this true?[36]

A. No. While the DBT longwall was available to begin mining in the next longwall panel, it was not needed due to the market conditions and the reduced generation at the Jim Bridger plant.

Q. Did the Company complete an analysis quantifying the cost and volume variances in 2016 relative to the base period?

A. Yes. Mr. Wilding's direct testimony filed in June 2017 states that BCC costs in 2016 increased by approximately $42.9 million compared to the base Deferral Period. Specific cost increases were identified as follows:

- $3.4 million due to lower British thermal unit heat content;
- $19.4 million due to spreading costs over a reduced volume of tons;
- $12.5 million due to abandonment of the Joy longwall; and
- $7.6 million due to Joy longwall recovery efforts.[37]

[35] Staff Exhibit JLB-1CT, page 27.
[36] Boise Exhibit BGM-1CT, page 18, lines 3-7.
[37] Direct Testimony of Michael G. Wilding Exhibit MGW-1T, page 12, lines 14-18.

Q. Despite the costs listed above, did customers receive a savings to power costs during the deferral period?

A. Yes, customers received an overall benefit of $1.2 million after the dead band as discussed in Mr. Wilding's direct testimony.[38]

Q. Did the Company attempt to project operating costs assuming that budgeted coal production and delivery targets were achieved?

A. No. There was no customer benefit to making arbitrary production and cost assumptions for a mine plan that could not reasonably be executed due to significantly reduced generation demand and the fact that it would not comply with governmental regulations for coal stockpile sizes.

Q. Do you agree with Staff's contention that "the unit price of coal for the Bridger underground mine should be [redacted] to the comparable price at the Black Butte Mine"?[39]

A. No. The use of a third-party market mine price comparison is inappropriate for several reasons. The southwest Wyoming coal market consists of only a handful of mines. In addition to BCC, there are only three other coal mines in southwest Wyoming; Kemmerer, Haystack, and Black Butte. Two of these mines, the Kemmerer and Haystack mines, are not presently viable fuel sources for the Jim Bridger plant (Haystack is not currently operational). The Jim Bridger plant receives approximately 25 percent of its fuel supplies from the Black Butte mine. The existing fuel supply mix of BCC and Black Butte coal is a symbiotic relationship. The Black Butte mine does not have sufficient excess capacity to supply the Jim Bridger plant

[38] PacifiCorp Exhibit MGW-1T, Page 5
[39] Staff Exhibit JLB-1CT, page 28, lines 6-7

with its entire coal supply needs, therefore, coal from the Black Butte mine is not available to replace BCC coal, which would be necessitated by a lower of cost or market theory. In addition, the coal supply agreement with the Black Butte mine is a fixed contract price from 2015 to 2017. The southwest Wyoming coal market does not contain sufficient buyers and sellers to establish a liquid market.

Q. Do you agree with Mr. Mullins's statement that high ash coal had "an impact on the operations of the Jim Bridger power plant… for a major portion of the Deferral Period"?[40]

A. No. While ash content levels outside plant design specifications unfavorably impact plant performance, the Company made a conscious decision to consume coal containing elevated ash levels in 2016 because market conditions reduced the need for Jim Bridger plant generation and the full capacity of the plant was not required during the time period. This provided the Company an opportunity to manage stockpiled coal with a higher ash content at a time when it would not unfavorably impact customer costs. Mr. Wilding's rebuttal testimony explains the market conditions and impacts in more detail.

Q. Is the coal quality trend from year to year as shown in Boise's Figure 4[41] of Mr. Mullins's testimony an accurate indicator of prudent management?

A. No. The longwall justification memo stated "the coal thickness at the underground mine is frequently less than the cutting height of the present DBT longwall, which results in higher levels of rock (ash) in the coal produced. This situation has become more frequent as mining continues in the western reserves. The ash level can be so

[40] Boise Exhibit BGM-1CT, page 17, lines 16-19.
[41] Boise Exhibit BGM-1CT, page 16.

high that coal cannot be effectively blended with surface mine coal and must be stockpiled." Management has no control of the fluctuations of coal seam thickness and was actively seeking solutions with better results. This was a driving factor for acquiring the Joy longwall system, which would improve coal quality. Equating the physical geologic declining conditions to management performance in regards to coal quality is inappropriate and demonstrates Mr. Mullins's lack of mining experience.

Q. Is Boise's Figure 4 "$/Ton" graph an accurate indicator of the yearly trend of coal prices at BCC?

A. No. Prior to 2011, PacifiCorp was required to report the mine production cost on the EIA Form 923. Beginning in 2011, the reported costs were sales prices, which included a portion attributed to Idaho Power's regulatory recovery, which is approximately [redacted]. PacifiCorp has noted this issue previously in several jurisdictions where Mr. Mullins has testified, but he has not made any corrections to this graph.

BCC COSTS

Q. Do you agree with Mr. Mullins that BCC is "far from" a competitive mine? [42]

A. No. Although BCC coal costs have increased, driven in part by reduced generating levels at the Jim Bridger plant, the Company has demonstrated that BCC has been an integral part of a least-cost, least-risk fuel plan for the Jim Bridger plant. The Company conducts thorough and comprehensive due diligence analysis before making any capital investments in BCC and periodically evaluates least-cost, risk-adjusted fuel forecasts for the Jim Bridger plant.

[42] Boise Exhibit BGM-1CT, page 13, line 15.

Q. Is Mr. Mullins's assertion that the cost of coal at BCC "is hardly a favorable number when one considers that the market cost of coal is closer to $12.00/ton"[43] supported with a comprehensive long-term fuel plan analysis?

A. No. Mr. Mullins merely compares a snapshot of a freight-on-board (FOB) mine price from the Powder River Basin (PRB) to a delivered BCC price. This is not a valid comparison since FOB pricing for PRB is in a different location than BCC and a valid comparison would include transport cost to BCC. Additionally, Mr. Mullins did not complete a long-term comprehensive fuel plan and failed to consider the following:

- Rail transportation costs;
- Dust suppression costs;
- Coal handling costs;
- Jim Bridger plant capital investments necessary to deliver significant volumes of PRB coal;
- Lead-time required to design, build, construct, and integrate PRB conversion equipment at the plant;
- BCC unrecovered mine investments;
- BCC final reclamation/closure activity costs;
- Risk associated with making a substantial plant capital investment in a rapidly changing power generation market; and
- Market volatility of external fuel and transportation prices.

[43] Boise Exhibit BGM-1CT, page 9, lines 12-13.

JIM BRIDGER PLANT LONG-TERM FUEL SUPPLY STRATEGY

Q. Have coal prices demonstrated significant volatility in recent years?

A. Yes. Both PRB and BCC prices and production volumes have been volatile in recent years. This underscores the importance of examining fuel supply plans on a long-term basis. Long-term fuel plans should not be abandoned due to short-term market anomalies or cyclical changes.

Q. When was the most recent long-term fueling plan for the Jim Bridger plant completed?

A. PacifiCorp's Confidential Long-Term Fuel Supply Plan for the Jim Bridger Plant was prepared in compliance with separate orders from the Public Utility Commission of Oregon and the Wyoming Public Service Commission in the fourth quarter of 2015.

Q. Did the Company provide a copy of the most recent long-term fueling plan to Staff that evaluated these factors above?

A. Yes. The fueling plan was provided to Staff on November 21, 2017, in response to WUTC Data Request 6 in this current docket.

Q. Did the evaluation confirm that a fuel plan using BCC coal remained the least-cost, least-risk fueling option for the Jim Bridger plant?

A. Yes. The analysis demonstrated the scenario assuming BCC operated through [redacted] was favorable to the market scenario that assumed [redacted].

Q. How does the long-term fuel supply plan compare to Mr. Mullins's graph comparing EIA Form 923 costs from other mines in Wyoming to BCC costs?[44]

A. The comparison is misleading because it doesn't present the entire story. As previously stated in my testimony the elements of a long-term comprehensive fuel supply plan include analyzing all the costs listed above related to fueling a coal plant. The Company currently operates under a long-term fuel plan that selects the least-cost, least-risk fuel supply for the Jim Bridger plant, relying on the optimal supply from BCC and the limited market options available.[45]

Q. You mentioned significant market volatility in recent years and the requirement to periodically update long-term fueling plans. Is the Company currently developing a new long-term fuel plan for the Jim Bridger plant?

A. Yes. PacifiCorp is developing a new long-term fuel plan with updated information to determine the least-cost, least-risk strategy for fueling the Jim Bridger plant. This evaluation reinforces the prudence in pursuing a thoughtful, long-term approach to strategic fueling decisions because fueling assumptions can change substantively.

Q. When does the Company expect to complete its new long-term fuel plan?

A. The Company expects to complete the long-term fuel plan on or before March 30, 2018. This updated fuel plan can be supplied to Staff in April 2018.

Q. Does this conclude your rebuttal testimony?

A. Yes.

[44] Boise Exhibit BGM-1CT, page 14, Figure 3.
[45] Long-Term Fuel Supply Plan for the Jim Bridger Plant December 2015.