#### **BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH**

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DOCKET NO. 17-035-01 Exhibit DPU 2.0 R

Testimony and Exhibits Philip DiDomenico and Dan F. Koehler

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

**Rebuttal Testimony of** 

## Philip DiDomenico and Dan F. Koehler

January 11, 2018

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### 1 I. Introduction

- 2 Q: Please state your name, business address and title.
- 3 A: My name is Philip DiDomenico. I am employed by Daymark Energy Advisors, Inc
- 4 ("Daymark") as a Managing Consultant. My business address is 370 Main Street, Suite
- 5 325, Worcester, Massachusetts, 01608.
- 6 My name is Dan F. Koehler. I am employed by Daymark as a Consultant. My business
- 7 address is 370 Main Street, Suite 325, Worcester, Massachusetts, 01608.

### 8 Q: On whose behalf are you testifying?

- 9 A: We are jointly testifying on behalf of the Division of Public Utilities of the State of Utah
  10 (the "Division").
- 11 Q: Have you previously filed testimony in this proceeding?
- 12 A: Our direct testimony in this proceeding was filed on November 15, 2017.

13 Q: What is the purpose of your rebuttal testimony?

- 14 A: The purpose of our rebuttal testimony is to respond to the response testimony of
- 15 PacifiCorp d/b/a Rocky Mountain Power ("RMP" or "the Company") witnesses Dana M.
- 16 Ralston and Michael Wilding. We respond to certain issues raised by those witnesses,
- 17 but a lack of response to any particular issue raised by Company witnesses or other
- 18 parties should not be construed as agreement on that issue.
- 19 **II.** Ralston Response Testimony
- 20 Q: To what issues raised in Mr. Ralston's response testimony do you wish to respond?
- 21 A: In our direct testimony, we recommended that two specific adjustments be made to the
- 22 Company's requested Utah-allocated EBA deferral amount. We found that the loss of the
- 23 Joy longwall at Jim Bridger mine was a result of imprudent management of the Bridger

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24		Mine. We recommended that the \$12.5 million Joy longwall abandonment expense and
25		\$7.6 million in recovery cost be removed from Company-wide actual net power costs
26		("NPC"), resulting in a reduction of the requested EBA deferral amount by \$8,420,710.
27		We also recommended that \$517,618 in net replacement power costs related to 14
28		imprudent outages be removed from Company-wide actual NPC, resulting in a reduction
29		of the EBA deferral amount by \$210,486. Mr. Ralston's response testimony disputes that
30		the Company acted imprudently in any of these instances, and asserts that no adjustment
31		to EBA amounts is necessary.
32		Joy Longwall
33	Q:	How do you respond to Mr. Ralston's testimony on the Joy longwall?
34	A:	Mr. Ralston's testimony states the majority of the items discussed in the "Methods to
35		Prevent a Reoccurrence" section of the Root Cause Analysis ("RCA") report emphasize a
36		need to improve existing practices and/or procedures as opposed to an absence of
37		procedures. We fundamentally disagree and repeat for the record the specific
38		recommendations from the RCA report.
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41		2.
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<sup>&</sup>lt;sup>1</sup> Confidential Attachment DPU 15.7, Joy Longwall 14<sup>th</sup> Right Investigation – FINAL Report of Investigation (October 13,201).

#### 65 Q: How do you interpret these "Methods to Prevent a Reoccurrence"?

- A: In our view this is not a list of recommendations for improvement. This is a list of major
  deficiencies and lack of control.
- 68 **Q:**

## Do any of the further details on these eight items provided in Mr. Ralston's

- 69 **testimony change your interpretation?**
- 70 A: No. Many of the details Mr. Ralston provides are simply describing measures the
- 71 Company has taken since the Joy longwall abandonment to address its failures, including
- the formalization of written standards in August 2017. These steps are necessary and
- important, but they have no bearing on the imprudent management and operation of theJoy longwall that led to its loss.

## Q: Why do you believe the Company was imprudent in its Management and Operation of the Joy longwall?

- 77 A: The concepts of written standards, site-specific training, regular communications, formal 78 documentation and the availability of critical spare parts are by no means unique to the 79 coal mining industry. They are fundamental in any operational environment. The fact that 80 these fundamentals were not already sufficiently in place was likely a major contributor 81 to the events that ultimately led to the Joy longwall abandonment. Further, as Mr. Ralston 82 states in his testimony the Company was well aware of the challenging geological 83 conditions present at this mine. This foreknowledge combined with the operational and 84 managerial deficiencies identified in their own RCA leads us to a finding of imprudence. 85 Does the Company's Response Testimony cause you to change your **0**:
- 86 recommendation with regard to Joy longwall costs in the EBA?

87	A:	No. We continue to recommend that EBA costs should be adjusted to remove the \$12.5
88		million Joy longwall abandonment expense and \$7.6 million in recovery cost on a
89		Company-wide basis, resulting in a reduction of the EBA deferral amount by \$8,420,710.
90		These amounts are unchanged from our original EBA audit report.
91		Colstrip Unit 3 Outage
92	Q:	How do you respond to Mr. Ralston's testimony on the Colstrip Unit 3 outage?
93	A:	Mr. Ralston's testimony asserts that the Colstrip Unit 3 outage was the result of material
94		failure and not the absence of prudent procedures and practices. He states that any known
95		deficiencies were corrected as timely and prudently as possible. The economizer issues
96		discovered during the 2011 inspection led the operator of the Colstrip plant to develop a
97		plan to address these issues and re-inspect the area in 2014 during the next schedule
98		outage. It was also anticipated that an additional project would be needed in 2017
99		because of erosion in various areas of the economizer. The tube where the failure
100		occurred was inspected in 2014 and the tube's wall thickness was deemed acceptable. A
101		re-inspection was planned for 2017 where any tubes lacking the proper wall thickness
102		would be replaced. We maintain that there was a lack of urgency on the part of the
103		Company to address the problem area that lead to the outage. While the economizer
104		issues were identified in 2011, the Company was willing to wait until 2017 to replace any
105		faulty tubes. Additionally, if a more complete repair had occurred in 2014, this particular
106		outage could have been avoided. Nothing offered in Mr. Ralston's testimony changes our
107		position that the Company acted imprudently since the outage could have been avoided if
108		the economizer problem area was properly addressed in 2014. Furthermore, Mr. Ralston
109		contends that the Boiler Circulating Water Pump failure that extended the outage was the

110		result of equipment failure and not imprudence on the part of the Company. Overall, only
111		84 hours out of the 209 hour duration of the outage were related to the boiler tube leak,
112		and the remainder was related to the water pump failure during startup of the unit after
113		the tube leak repair was complete. We accept the Company's position that the last 125
114		hours of the outage were related to an equipment failure and not the imprudent action
115		discussed above regarding the tube leak issue. Therefore, as discussed in our response to
116		Mr. Wilding's testimony below, we recommend Company-wide replacement power costs
117		of \$1,274 associated with the first 84 hours of this outage be disallowed in the EBA.
118		Colstrip Unit 4 Outage
119	Q:	How do you respond to Mr. Ralston's testimony on the Colstrip Unit 4 outage?
120	A:	Mr. Ralston states that the #11 bearing leak that caused the outage was the result of
121		equipment failure and not procedural failure by the Company and therefore no adjustment
122		of EBA cost should be granted. He explains that the leak occurred from a one inch valve
123		that was put in place for the oil flush where a pipe cap originally existed. The valve was
124		closed and not removed after the oil flush had been completed. Mr. Ralston argues that
125		the subsequent leak that occurred from the valve was due to the malfunction of the
126		equipment and not a procedural failure by the Company. We believe that the Company
127		has provided contradictory information regarding the cause of the #11 bearing leak. The
128		original event report attributed the leak to
129		. <sup>2</sup> However, in subsequent data requests, the Company has claimed that the
130		leak was not caused by

<sup>2</sup> Confidential Attachment DPU 1.6-4 "2017.10.27 U4 LO Leak."

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131		testimony now explains that the cause of the leak was a one inch valve that was closed
132		and left in place after the oil flush. The Company has not provided a consistent,
133		straightforward explanation of why the original event report for the outage states that
155		
134		if that was not the case. Until the Company can satisfactorily
135		explain the inconsistencies in its event reports and demonstrate that the original event
136		report is inaccurate, we maintain that the Company acted imprudently and recommend an
137		adjustment of Company-wide EBA cost for the replacement power cost of \$27,193.
138		Dave Johnston Unit 4 Outage
139	Q:	How do you respond to Mr. Ralston's testimony on the Dave Johnston Unit 4
140		outage?
141	A:	Mr. Ralston explains in his testimony that the outage was the result of equipment failure
142		and not procedural failure on the part of the Company. He states that condenser tube
143		sheet room temperature vulcanization (RTV) repair was effective from 1988 to June
144		2009, with only small RTV repairs occurring during this period. After several leaks
145		occurred in 2009, 2010, and 2014, the Company determined that a protective tube sheet
146		coating installed in 1987 had significantly deteriorated which prevented proper adhesion
147		of RTV to the tube sheet, making additional RTV repairs difficult. Before the end of
148		2014, the Company had considered and reviewed potential solutions, determining that
149		epoxy cladding the tube sheet was the most economical solution. The epoxy cladding
150		installation was slated for 2017 during a planned unit overhaul. A leak occurring in
151		March 2016 led to the epoxy cladding being installed in one side of the condenser with
152		the other side being completed during the scheduled overhaul that began in March 2017.
153		We believe that the Company acted imprudently by failing to replace the RTV sealant

154		until 2016. In the root cause analysis (RCA) for this outage, the Company explained that
155		. <sup>3</sup> Because the Company
156		has acknowledged that the RTV sealant <b>equations</b> , the Company acted
157		imprudently by leaving in place for over 25 years. A more
158		permanent solution, such as the epoxy cladding, should have been considered and
159		installed many years before, particularly when leaks began appearing in 2009 and
160		thereafter. The imprudence displayed by the Company for failing to replace the
161		temporary RTV sealant before 2016 warrants an adjustment to Company-wide EBA costs
162		in the amount of the net replacement power cost for this outage, which is \$117,201.
163		Gadsby Units 4, 5 and 6 Outages
164	Q:	How do you respond to Mr. Ralston's testimony on the Gadsby pipeline outages?
	· ·	
165	A:	Mr. Ralston's testimony states that the Company's response to the Gadsby gas pipeline
165 166	-	
	-	Mr. Ralston's testimony states that the Company's response to the Gadsby gas pipeline
166	-	Mr. Ralston's testimony states that the Company's response to the Gadsby gas pipeline outage was prudent. The Company tested the cathodic protection of the pipeline in 2014
166 167	-	Mr. Ralston's testimony states that the Company's response to the Gadsby gas pipeline outage was prudent. The Company tested the cathodic protection of the pipeline in 2014 and 2015 with no indication of system issues. When the leak occurred in March 2016, the
166 167 168	-	Mr. Ralston's testimony states that the Company's response to the Gadsby gas pipeline outage was prudent. The Company tested the cathodic protection of the pipeline in 2014 and 2015 with no indication of system issues. When the leak occurred in March 2016, the pipe was found to be in very good condition along the majority of sections including
166 167 168 169	-	Mr. Ralston's testimony states that the Company's response to the Gadsby gas pipeline outage was prudent. The Company tested the cathodic protection of the pipeline in 2014 and 2015 with no indication of system issues. When the leak occurred in March 2016, the pipe was found to be in very good condition along the majority of sections including where the cathodic protection was connected. However, the elbows and joints where the
166 167 168 169 170	-	Mr. Ralston's testimony states that the Company's response to the Gadsby gas pipeline outage was prudent. The Company tested the cathodic protection of the pipeline in 2014 and 2015 with no indication of system issues. When the leak occurred in March 2016, the pipe was found to be in very good condition along the majority of sections including where the cathodic protection was connected. However, the elbows and joints where the pipe had been wrapped or coated in the field after installation showed corrosion and
166 167 168 169 170 171	-	Mr. Ralston's testimony states that the Company's response to the Gadsby gas pipeline outage was prudent. The Company tested the cathodic protection of the pipeline in 2014 and 2015 with no indication of system issues. When the leak occurred in March 2016, the pipe was found to be in very good condition along the majority of sections including where the cathodic protection was connected. However, the elbows and joints where the pipe had been wrapped or coated in the field after installation showed corrosion and pitting. After pressure testing the pipe with nitrogen and exposing 50 percent of the pipe,

<sup>&</sup>lt;sup>3</sup> Confidential Attachment DPU 1.6-4 "SER-DVJ4-032516-Condenser tube leak."

175		in Mr. Ralston's testimony changes our original conclusion that the lack of appropriate
176		planned maintenance of the pipeline led to this outage. In particular, regular maintenance
177		of the cathodic protection of this pipe needed to be carried out earlier than 2014 when the
178		Company implemented such a maintenance plan. Additional evidence that the system
179		was not properly monitored or maintained was
180		
181		The lack of proper planned maintenance constitutes imprudence leading
182		to the six separate Gadsby Unit 4-6 outages. Therefore, an adjustment to EBA cost for
183		this outage is justified. As discussed in our response to Mr. Wilding's testimony, the
184		Company-wide NPC associated with replacement power costs for these outages total
185		\$53,811.
186		Gadsby Unit 6 Outage
186 187	Q:	<i>Gadsby Unit 6 Outage</i> How do you respond to Mr. Ralston's testimony on the Gadsby Unit 6 outage?
	<b>Q:</b> A:	·
187	-	How do you respond to Mr. Ralston's testimony on the Gadsby Unit 6 outage?
187 188	-	How do you respond to Mr. Ralston's testimony on the Gadsby Unit 6 outage? Mr. Ralston states in his testimony that the Company prudently responded to the coil
187 188 189	-	How do you respond to Mr. Ralston's testimony on the Gadsby Unit 6 outage? Mr. Ralston states in his testimony that the Company prudently responded to the coil failures that caused this outage by methodically testing components until it was
187 188 189 190	-	How do you respond to Mr. Ralston's testimony on the Gadsby Unit 6 outage? Mr. Ralston states in his testimony that the Company prudently responded to the coil failures that caused this outage by methodically testing components until it was discovered that the exciter was the root cause. After the exciter was determined to be the
187 188 189 190 191	-	How do you respond to Mr. Ralston's testimony on the Gadsby Unit 6 outage? Mr. Ralston states in his testimony that the Company prudently responded to the coil failures that caused this outage by methodically testing components until it was discovered that the exciter was the root cause. After the exciter was determined to be the root cause, the manufacturer and installer of the exciter, NEC, was promptly engaged in
187 188 189 190 191 192	-	How do you respond to Mr. Ralston's testimony on the Gadsby Unit 6 outage? Mr. Ralston states in his testimony that the Company prudently responded to the coil failures that caused this outage by methodically testing components until it was discovered that the exciter was the root cause. After the exciter was determined to be the root cause, the manufacturer and installer of the exciter, NEC, was promptly engaged in the repair. While the Company may have responded in an appropriate and timely manner
187 188 189 190 191 192 193	-	How do you respond to Mr. Ralston's testimony on the Gadsby Unit 6 outage? Mr. Ralston states in his testimony that the Company prudently responded to the coil failures that caused this outage by methodically testing components until it was discovered that the exciter was the root cause. After the exciter was determined to be the root cause, the manufacturer and installer of the exciter, NEC, was promptly engaged in the repair. While the Company may have responded in an appropriate and timely manner regarding the investigation of the coil failure and repair of the exciter, we believe that the
187 188 189 190 191 192 193 194	-	How do you respond to Mr. Ralston's testimony on the Gadsby Unit 6 outage? Mr. Ralston states in his testimony that the Company prudently responded to the coil failures that caused this outage by methodically testing components until it was discovered that the exciter was the root cause. After the exciter was determined to be the root cause, the manufacturer and installer of the exciter, NEC, was promptly engaged in the repair. While the Company may have responded in an appropriate and timely manner regarding the investigation of the coil failure and repair of the exciter, we believe that the imbalance in the three phase resistance caused by the exciter, which led to the failure of

198		. <sup>4</sup> Regardless of
199		whether the fault is that of the Company or the contractor, such a failure to follow
200		industry standards warrants a finding of imprudence. Therefore, we recommend an
201		adjustment of EBA costs to remove net replacement power cost associated with this
202		outage. As discussed in our response to Mr. Wilding's testimony, the Company-wide
203		NPC associated with replacement power costs for this outage is \$65,717.
204		Hermiston Unit 1 Outages
205	Q:	How do you respond to Mr. Ralston's testimony on the Hermiston Unit 1 outages?
206	A:	Mr. Ralston states in his testimony that the outage of September 18 <sup>th</sup> , 2016 was due to
207		failed equipment and not imprudent operations by the Company. He explains that the
208		operator of the plant, Hermiston Generating Company (HGC), properly enlisted experts,
209		General Electric (GE), to determining the root cause of the combustion can failure that
210		led to the outage. On August 2, 2016, Hermiston Unit 1 tripped offline because of a #11
211		failed combustion can. GE believed this failure to be caused by a lack of purge air and
212		additional investigation found that the purge air valve was shut. It was believed that the
213		shut valve was inadvertently shut by a contractor. When the unit tripped offline again on
214		September 18 <sup>th</sup> , 2016 due to the same issue, investigations by GE and HGC found that
215		the purge air valve had closed again. Since no contractors were on site during the time of
216		this outage, it was determined after plant personnel interviews that high vibration from
217		the combustion turbine had caused the valve to shut close.
218		. <sup>5</sup> Based on the additional explanation provided by Mr.

 <sup>&</sup>lt;sup>4</sup> Confidential Attachment DPU 20.10 "RCA GAD6-070916 Exciter Coil RCAT Report."
 <sup>5</sup> Confidential Response to DPU 20.11.

219		Ralston, we accept the Company's position that these outages were caused by equipment
220		failure and not by failure to follow industry practices. We recommend no adjustment to
221		EBA cost related to these two outages. However, the Company should not
222		as a permanent solution.
223		Naughton Unit 2 May 2016 Outage
224	Q:	How do you respond to Mr. Ralston's testimony on the Naughton Unit 2 May 2016
225		outage?
226	A:	Mr. Ralston's testimony states that the outage was caused by inappropriate actions of
227		hired third parties and was not the result of imprudent actions by the Company. The
228		contractor, GE, involved with the bearing was the original manufacturer of the
229		equipment. Mr. Ralston states that the Company prudently selects qualified vendors
230		through a competitive bidding structure and by following industry standards. He explains
231		that the project manager specifically discussed bearing clearances with the contractor to
232		avoid the type of problem that eventually occurred during this outage. Because the
233		replacement of the bearings was under warranty through the contract, the repairs were
234		carried out at no cost. However, Mr. Ralston states that contracts do not typically cover
235		replacement power costs since they involve a wide array of circumstances and damages
236		that are hard to identify and quantify. Further, "the actions the Company takes when
237		procuring services is prudent, within industry practices and in the best interests of the
238		customer (Ralston Response, lines 616-618)."
239	Q:	Is it your position that the GE service contract was imprudently procured or outside
240		of industry practices?

A: No. We have no reason to dispute the Company's claim that the GE service contract was
prudently procured and within industry practice.

243 Q: Can the Company be held responsible for an imprudent outage if the outage was

caused by inappropriate action of a third-party contractor or vendor under a

- 245 prudently-procured contract?
- A: Yes. PacifiCorp recovers the cost of its investment in owned and jointly owned

247 generation resources, and earns a return or profit on that investment. As an owner, the

248 Company is responsible for the performance of that asset, and cannot and does not

absolve itself of that responsibility simply because it has delegated the operation or repair

250 of that asset to another entity. Certainly, as between the Company and its ratepayers, the

251 Company is in a much better position to influence the operation of plants where it is not

the operator. If the Company operated in a regulatory system without an EBA the

253 Company would not recover any of the replacement power costs related to the forced

outage.

Q: Mr. Ralston's testimony states that your original report characterizes the
 Company's involvement with third-party contractors and vendors as "casual". Is

257 this accurate?

A: No, this statement has no basis in our report or in our position on recovering additional
net power costs related to third-party imprudence. The Company acknowledged that this
characterization is not found in our report in its response to DPU Data Request 25.5.

# 261 Q: What is your recommendation with regard to the Naughton Unit 2 May 2016 262 outage?

263	A:	The imprudent action leading to this outage is not in dispute. The Company has not
264		provided any information to change our position that it should not be allowed to recover
265		additional costs incurred due to this imprudent outage, regardless of the third-party
266		culpability. We still recommend an adjustment to Company-wide EBA cost for the
267		replacement power cost amount of \$47,949.
268		Naughton Unit 2 June 2016 Outage
269	Q:	How do you respond to Mr. Ralston's testimony on the Naughton Unit 2 June 2016
270		outage?
271	A:	Mr. Ralston states in his testimony that the Company's response to the fire was
272		appropriate and that the plant and fan company personnel could not identify a definite
273		root cause of the fire during the subsequent investigation. It was speculated that based on
274		the proximity of the coal pile, that coal dust could have been the cause of the fire.
275		However, Mr. Ralston states that it was not known prior to the fire that the area might
276		have been prone to coal dust accumulation. Therefore, any preventative measures to
277		mitigate coal dust buildup could not have been carried out beforehand since the buildup
278		problem was not known until after the fire. We maintain that the Company should have
279		carried out a more rigorous investigation since a fire should trigger more concern than
280		what was demonstrated by the Company. Furthermore, since Mr. Ralston acknowledges
281		that the Company recognizes coal dust as a hazard that requires diligent mitigation, the
282		Company failed to adequately prevent the buildup of coal dust in the affected area,
283		regardless if the possible link between the fire and coal dust accumulation was made after
284		the outage. We still recommend an adjustment of Company-wide EBA cost for the
285		replacement power cost of \$136,570.

III. Wilding Response Testimony 286 287 **Q**: To what issues raised in Mr. Wilding's response testimony do you wish to respond? 288 A: We respond to Mr. Wilding's alternative calculation of the replacement power cost 289 calculation related to the contested outages at Gadsby Units 4 - 6. We also accept his 290 recommended adjustments to replacement power calculations for contested outages at 291 Hermiston 1, Dave Johnston 4 and Colstrip 3. 292 Gadsby Units 4-6 293 **Q**: What are Mr. Wilding's suggestions related to the outage replacement power cost 294 estimation? 295 Mr. Wilding accepts the calculation methodology we used to estimate replacement power A: 296 costs for the Gadsby 4-6 outages but suggests three "corrections" to the inputs used in the 297 calculation. Mr. Wilding suggests the following changes in inputs to the calculation: 1) 298 the modeled price of replacement power should be based on PowerDex hourly market 299 prices at the 4-Corners market hub rather than California Independent System Operator's 300 ("CAISO") day-ahead market ("DAM") locational marginal prices ("LMP"); 2) variable 301 operating and maintenance ("VOM") costs should be modeled as \$ ; and 3) 302 modeled heat rates should be based on actual average heat rates. 303 **Q**: How do you respond to Mr. Wilding's suggested changes to inputs in the 304 replacement power cost calculation? 305 We accept Mr. Wilding's proposed inputs for market power prices and VOM but reject A: 306 his proposal to use actual average heat rates.

## 307 Q: Explain your response to Mr. Wilding's suggestion to use PowerDex hourly market 308 prices.

- 309 A: At the time of our analysis, we did not have access to proprietary PowerDex hourly
- 310 market prices. We maintain that there is no "perfect" market price index to use and that
- 311 CAISO DAM LMPs are an appropriate publicly available data source for this analysis,
- 312 which requires hourly granularity. Mr. Wilding notes that PacifiCorp balances Gadsby
- 313 output at the 4-Corners market hub, and PowerDex provides hourly index pricing at this
- 314 market hub. We accept for the purposes of the Gadsby outages analysis the use of
- 315 PowerDex hourly prices, as suggested by the Company.

### 316 Q: Explain your response to Mr. Wilding's suggestion to use actual VOM costs.

A: We accept the actual VOM provided by the Company. In response to DPU Data Request
25.1(c), the Company stated that the actual VOM value provided is the value used when
modeling generation dispatch.

# 320 Q: Explain why you reject Mr. Wilding's suggestion to use actual average heat rates in 321 the replacement power analysis.

322 A: Actual average heat rates reflect total fuel burned divided by net generation. This may or 323 may not be consistent with the incremental heat rate for the next unit of output that is the 324 appropriate signal for dispatch decisions. For instance, consider an available generator 325 that been dispatched minimally for some period. The plant would still burn some fuel to 326 provide station load, but it would provide little to no net generation output. Such a unit 327 could have an actual average heat rate several multiples of any operating heat rate, or it 328 could even be negative. Such a heat rate is nonsensical if used to model dispatch, which 329 is based on the marginal cost of the next increment or decrement of power.

330	Q:	Does the Company use actual average heat rates in its own dispatch modeling?
331	A:	No. In response to DPU Data Request 25.2 the Company provided the heat rate curves
332		used in its own dispatch modeling. The heat rate used in modeling dispatch reflect
333		discrete points on the curve, with average heat rates for specific operating levels ranging
334		from . The Gadsby units are more efficient at higher
335		operating levels, so full load heat rates are significantly lower (meaning less fuel is
336		required to produce each MW of generation) than partial load heat rates.
337	Q:	Did you revise the heat rate assumptions in the simplified dispatch modeling used to
338		estimate replacement power costs?
339	A:	Yes. In addition to the two input changes suggested by the Company, we also adjusted
340		our replacement power cost analysis to use heat rate inputs consistent with heat rate
341		curves used in Company modeling, as provided in Confidential Attachment DPU 25.2.
342		Our replacement power cost methodology is a simplified dispatch model based on a
343		single point estimate of each unit's heat rate. Rather than use the full load average heat
344		rate for each unit (ranging from <b>box</b> to <b>box</b> BTU/kWh for each of the Gadsby Units 4-
345		6), we conservatively used the partial (20 MW) load average heat rates, ranging from
346		to BTU/kWh.
347	Q:	How did the input adjustments affect your estimate of replacement power costs
348		associated with the Gadsby Unit 4-6 outages?
349	A:	Our revised analysis using PowerDex hourly prices, actual VOM, and heat rates from the
350		Company's dispatch modeling assumptions, as described above, results in a revised
351		estimate of \$119,528 in Company-wide replacement power costs associated with the
352		seven imprudent outages at Gadsby Units 4-6. These replacement power costs were used

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to calculate our revised adjustment to the EBA deferral amount, as shown in Table 1below.

355 Q: How do you respond to Mr. Wilding's testimony on the computation of Hermiston
356 Unit 1 and Dave Johnston Unit 4 replacement power costs?

357 A: Mr. Wilding noted a small error in the calculation of first-day or last-day peak and off-

358 peak outage hours for Hermiston Unit 1 and Dave Johnston Unit 4. We accept this

359 correction. The Company-wide replacement power costs associated with the Dave

- Johnston Unit 4 outage are \$117,201, a reduction of \$281 from our direct testimony. We
- 361 are no longer recommending the Hermiston Unit 1 outage for disallowance, rendering the362 Hermiston correction moot.
- 363 Q: How do you respond to Mr. Wilding's testimony on the computation of Colstrip
  364 Unit 3 replacement power costs?
- 365 A: Mr. Wilding asserts that only 84 of the 209 outage hours were directly related to the
  366 economizer tube leak issue subject to our finding of imprudence. The Company's
- 367 position is that the second outage, related to a boiler water pump that failed upon
- 368 attempted restart of the unit after resolving the tube leak issue, should not be subject to
- 369 the same finding of imprudence, and should therefore not contribute to replacement
- power cost disallowance in the EBA. As discussed in our response to Mr. Ralston's
- 371 testimony, we accept the Company's position in this instance. As a result, the Company-
- 372 wide replacement power costs recommended for disallowance in the EBA is reduced
- 373 from \$2,923 to \$1,274.
- 374 Q: What other changes to outage-related disallowances are you recommending?

375	A:	As discussed above in our response to Mr. Ralston's testimony, we are not
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376 recommending an adjustment to EBA deferral based on either Hermiston outage.

## 377 Q: Please summarize your recommended outage-related reductions in Company-wide 378 NPC.

379 A: After considering new information provided by the Company in Response Testimony and 380 in responses to follow-up data requests, we have made some adjustments to our 381 calculation of replacement power costs, and we have withdrawn recommended 382 disallowance associated with two outages. Still, nothing in the Company's response 383 testimony changes our conclusion that 12 outages demonstrated sufficient imprudence 384 that we recommend reducing EBA costs to reflect net replacement power costs related to 385 the outages. The total reduction in Company-wide NPC for these outages is \$449,715, as 386 shown in Table 1 below. Division Witness David Thomson discusses the impact of this 387 Company-wide NPC reduction on RMP's requested EBA deferral amount. The Utah-388 allocated EBA deferral adjustment related to imprudent outage replacement power costs 389 is \$176,069.

Outage	Start Date		Estimated Replacement Power Cost	D	ecommended isallowance - ompany NPC
Gadsby 4	3/30/2016	\$	5,284	\$	5,284
Gadsby 4	4/8/2016	\$	12,420	\$	12,420
Gadsby 5	3/30/2016	\$	6,780	\$	6,780
Gadsby 5	4/8/2016	\$	9,472	\$	9,472
Gadsby 6	3/30/2016	\$	9,055	\$	9,055
Gadsby 6	4/8/2016	\$	10,800	\$	10,800
Gadsby 6	7/19/2016	\$	65,717	\$	65,717
Gadsby Outages Subtotal			119,528	\$	119,528
Colstrip 3	5/13/2016	\$	1,274	\$	1,274
Colstrip 4	10/27/2016	\$	27,193	\$	27,193
Dave Johnston 4	3/25/2016	\$	117,201	\$	117,201
Hermiston 1	8/2/2016	\$	80,835	\$	-
Hermiston 1	9/18/2016	\$	7,113	\$	-
Naughton 2	6/6/2016	\$	136,570	\$	136,570
Naughton 2	5/28/2016	\$	47,949	\$	47,949
GRAND TOTAL		\$	537,663	\$	449,715

### Table 1 – Outage Summary

391

## 392 IV. Revised Adjustments to the EBA

393	Q:	Based upon your review of the Company's response testimony and your rebuttal
394		testimony, what adjustments do you now propose to calendar year 2016 EBA costs?
395	A;	Based upon the discussion above, we continue to recommend that the EBA deferral
396		request be adjusted to remove the \$12.5 million Joy longwall abandonment expense and
397		\$7.6 million in recovery cost included in Company-wide NPC. The Utah-allocated EBA
398		deferral adjustment related to Joy longwall costs is \$8,420,710. We also recommend
399		adjusting Company-wide EBAC for the replacement power cost related to 12 of the 16
400		outages discussed in our direct testimony and EBA Audit report. The total reduction in
401		Company-wide NPC for these outages is \$449,715, resulting in a Utah-allocated EBA
402		deferral adjustment of \$176,069. Our revised recommended adjustments increase the

390

- 403 proposed refund to Utah customers by \$8,596,779. The calculation of Utah allocated
- 404 amounts with carrying charges is presented in the rebuttal testimony of DPU Witness
- 405 Thomson.
- 406 **Q:** Does this conclude your testimony?
- 407 A: Yes.