

BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

---

In the Matter of the Application of Rocky Mountain Power For Authority to Increase its Retail Electric Utility Service Rates in Utah and for Approval of its Proposed Electric Service Schedules and Electric Service Regulations.	)	DOCKET NO. 11-035-200
	)	DPU EXHIBIT 4.0 DIR-REV REQ

---

PRE-FILED DIRECT TESTIMONY

GEORGE W. EVANS

ON BEHALF OF THE

UTAH DIVISION OF PUBLIC UTILITIES

June 11, 2012

**REDACTED**

1 PRE-FILED DIRECT TESTIMONY  
2 GEORGE W. EVANS  
3 DIVISION OF PUBLIC UTILITIES  
4

5 **INTRODUCTION**  
6

7 **Q. Please state your name, business address, employer, and current position or**  
8 **title for the record.**

9 A. My name is George W. Evans, and my business address is 358 Cross Creek Trail,  
10 Robbinsville, North Carolina 28771. I am the President of Evans Power  
11 Consulting, Inc.

12 **Q. For whom are you providing testimony in this case?**

13 A. I am providing testimony on behalf of the Utah Division of Public Utilities (DPU  
14 or Division).

15 **Q. Please describe your education and work experience.**

16 A. I received a Bachelor of Science in Applied Mathematics from the Georgia  
17 Institute of Technology in 1974. In 1976, I received a Master of Science in  
18 Applied Mathematics, also from the Georgia Institute of Technology. My area of  
19 concentration was probability and statistics. In 1980 I joined Energy  
20 Management Associates, Inc. (EMA), the company responsible for the  
21 development of the premier electric utility modeling tools, PROMOD<sup>®</sup>,  
22 PROSCREEN<sup>®</sup>, PROVIEW<sup>®</sup> and MAINPLAN<sup>®</sup>. While at EMA, I worked with  
23 some fifty (50) major electric utilities in the United States and Canada in the

24 application of these modeling tools for generation expansion planning, the  
25 development of net power costs, fuel budgeting, the analysis of power purchases  
26 and the development of optimal maintenance schedules for generating units.

27 In 1989 I left EMA to join GDS Associates, Inc., a consulting firm located in  
28 Marietta, Georgia. At GDS I was a principal and the Manager of System  
29 Modeling. In this position I was primarily responsible for performing analyses  
30 and presenting expert testimony concerning integrated resource planning, the  
31 forecasting of system production costs, developing estimates of the likelihood of  
32 service interruptions, developing estimates of replacement power costs and related  
33 activities.

34 In August of 1997 I left GDS to join Slater Consulting as a Vice President. In  
35 December of 2011, I left Slater Consulting to form Evans Power Consulting, Inc.

36 **Q. Where have you testified before?**

37 **A.** I have provided expert testimony on 40 previous occasions, before the public  
38 utility commissions in Pennsylvania, Georgia, Michigan, Arkansas, South Dakota,  
39 Colorado, Illinois, Mississippi, Alabama, Delaware, South Carolina and  
40 Oklahoma; and also before the FERC (Federal Energy Regulatory Commission),  
41 and in state court and federal court. A complete list of the proceedings that I have  
42 testified in is included in DPU Exhibit 4.1.

43 **Q. Have you appeared before the Public Service Commission of Utah (the**  
44 **Commission) in the past?**

45 **A.** Yes, I have. I presented direct, supplemental and rebuttal testimony on behalf of  
46 the DPU in Docket No. 09-035-23, the 2010 general rate case for Rocky  
47 Mountain Power Company (the Company) and direct and rebuttal testimony on  
48 behalf of the DPU in Docket No. 10-135-124, the Company's 2011 general rate  
49 case. In addition, I served as the DPU's consultant on net power cost issues in the  
50 Company's two 2010 major plant addition cases.

51 **PURPOSE OF TESTIMONY**

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

53 **A.** The purpose of my testimony is to identify and quantify certain recommended  
54 adjustments to the Company's Net Power Costs (NPC) as proposed in the current  
55 Utah rate case. In this rate case PacifiCorp, which does business in Utah as Rocky  
56 Mountain Power, proposes a rate increase of \$172.3, which includes  
57 approximately \$16 million directly attributed to increased NPC, based upon a test  
58 year beginning June 1, 2012 and ending May 31, 2013.

59 **Q. What is the amount that the Company has filed as a Total Company NPC for**  
60 **the test year?**

61 **A.** As identified in the direct testimony of Company witness Mr. Gregory N. Duvall  
62 (page 2, lines 35-38), the Company originally filed normalized NPC for the test  
63 year of approximately \$1.500 billion, with approximately \$645 million of these

64 costs allocated to Utah. However, on May 11, 2012, the Company submitted  
65 updated NPC of \$1.479 billion, with \$636 million allocated to Utah. The  
66 Company's update incorporates the impacts of three (3) corrections and fifteen  
67 (15) separate updates to the originally filed NPC.

68 **Q. How does the Company compute its proposed NPC?**

69 **A.** As in previous rate cases, the Company utilizes its computer model GRID to  
70 compute NPC.

71 **Q. What recommendations are you making in this filing?**

72 **A.** I am recommending ten adjustments to the Company's updated NPC, as listed in  
73 Table 1.

74 **Q. How have you developed your adjustments?**

75 **A.** For the most part, I have used the Company's GRID model and the Company's  
76 GRID data, with appropriate modifications. Adjustments 6 and 9 did not require  
77 the GRID model.

78

79

**Table 1**

	<u>System</u>	<u>Utah</u>
<b>Company's Updated Net Power Costs</b>	\$1,479.2	\$636.0
<b>Proposed Adjustments:</b>		
Wind Integration Costs:		
1 Remove Wind Contingency Double Count	-\$0.9	-\$0.4
2 Reduce Reserve Requirement	-\$8.6	-\$3.7
Contracts and Market Sales and Purchases:		
3 Remove Market Caps	-\$8.1	-\$3.5
4 Cal ISO	-\$6.0	-\$2.6
5 DC Intertie	-\$4.7	-\$2.0
6 Centralia Point to Point	-\$1.1	-\$0.5
Fossil Generation Issues:		
7 Heat Rate Deration	-\$4.7	-\$2.0
8 Allow gas units to cycle and Chehalis to provide reserves	-\$2.8	-\$1.2
9 Startup Energy	-\$0.6	-\$0.3
Other		
10 Line Losses	-\$4.2	-\$1.8
<b>Total Adjustment</b>	<b>-\$41.8</b>	<b>-\$18.0</b>
<b>Adjusted Net Power Costs</b>	<b>\$1,437.4</b>	<b>\$618.0</b>

80

81 **Q. Will you describe each of these recommended adjustments?**

82 A. I will describe each of these proposed adjustments to NPC in the following  
83 sections of my testimony. I am also making certain recommendations concerning  
84 the Company's update to NPC, which appear at the end of this testimony.

85 **WIND INTEGRATION COSTS**

86 **Q. How has the Company included wind integration costs in NPC?**

87 A. The Company relies on its 2010 Wind Integration Study (the Wind Study) as the  
88 basis for claimed wind integration costs<sup>1</sup>. The Wind Study was filed with the  
89 Commission in the 2011 Integrated Resource Plan docket and the 2011 General  
90 Rate Case. Based on the Wind Study, the Company increased the system reserve  
91 requirements in the GRID model and included an inter-hour charge of \$0.88 per  
92 megawatt-hour of wind generation (outside of the GRID model).

93 **Q. Is this the same methodology used by the Company in the previous general**  
94 **rate case?**

95 A. No, it is not. In addition to increasing the system reserve requirement and  
96 including an inter-hour charge, in the previous rate case, the Company also forced  
97 the Gadsby combustion turbine (CT) units (Gadsby units 4, 5 and 6) to operate in  
98 all hours of the test year, regardless of economics. Mr. Duvall's testimony in that  
99 case included the following statement:

---

<sup>1</sup> Lines 224-227 on page 12 of Mr. Duvall's direct testimony

100 “In addition, as identified in the Wind Study, the Company also modeled  
101 the Currant Creek unit, and Gadsby units 4, 5 and 6 as must-run units that  
102 are not subject to the logic of being committed to run only when  
103 economic.”<sup>2</sup>

104 **Q. Since the Company is relying on the same Wind Study in this case to justify**  
105 **the modeling for wind integration costs, how can the Company justify**  
106 **changing its modeling for wind integration costs?**

107 A. The Company cannot justify the round-the-clock operation of the Gadsby CTs  
108 simply because the Gadsby CTs do not actually operate this way. Mr. Duvall  
109 concedes this point in his direct testimony:

110 Gadsby Must-Run – The Gadsby peaking units 4, 5 and 6 are no longer  
111 modeled as must-run units overnight. This addresses DPU proposed  
112 adjustment 2, OCS proposed adjustment 2.1, and UIEC proposed  
113 adjustment 3 from the 2011 GRC.<sup>3</sup>

114 By conceding that this conclusion of the Wind Study is incorrect, the Company is  
115 admitting that the Wind Study is unreliable. One cannot pick and choose those  
116 conclusions of the Wind Study that seem reasonable – either the Wind Study is  
117 reliable or it is not. The Company’s actions in this rate case clearly demonstrate  
118 that the Wind Study cannot be relied upon for the computation of wind integration  
119 costs.

---

<sup>2</sup> Lines 572-575 on page 26 of Mr. Duvall’s direct testimony in Docket No. 10-035-124

<sup>3</sup> Lines 184-187 on page 11 of Mr. Duvall’s direct testimony



120 **Q. Is there other information that supports your claim that the Wind Study is**  
121 **fatally flawed?**

122 A. Yes. The Wind Study also attempts to quantify the amount of reserves that are  
123 required to maintain reliability with various levels of additional wind generation.  
124 Mr. Duvall, in the development of NPC, utilizes the Wind Study results to set the  
125 reserve requirement within GRID<sup>4</sup>.

126 **Q. What concerns do you have with the level of reserves used by Mr. Duvall?**

127 A. Mr. Duvall never considered recent actual reserves carried by the Company when  
128 setting the reserve requirements in GRID for the computation of NPC. Instead the  
129 Company relies upon the Wind Study, which the Company has now conceded is  
130 incorrect.

131 **Q. Have you compared the Company's actual levels of reserves to those that Mr.**  
132 **Duvall has assumed within GRID?**

133 A. Yes, I have. The following chart compares actual average hourly reserves for  
134 2007-2011, as reported by the Company, to the reserves carried by GRID in the  
135 computation of NPC.

136 

---

<sup>4</sup> Lines 231-241 on page 13 of Mr. Duvall's direct testimony

137 **Q. Will recent actual Company operations reflect the Company's response to**  
138 **the intermittent nature of wind generation?**

139 A. Yes. As of December 1, 2010, the Company had in operation 2,135 megawatts of  
140 wind capacity. For the computation of NPC in this case, the Company is  
141 assuming 2,251 megawatts of installed wind capacity. Thus recent actual  
142 Company operations will be representative of the operating changes necessary to  
143 integrate wind generation at the level assumed in the test year. In fact, changes in  
144 system operations over recent years should show the move to the Company's  
145 assumed operating changes in the GRID runs.

146 **Q. Do actual operations support this increase in reserves?**

147 A. No, they do not. Given that nearly all the anticipated wind generation in the test  
148 year had been installed and operating before 2011, the increase in the GRID  
149 reserves is unjustified.

150 **Q. Are there other indications that the Wind Study exaggerates the need for**  
151 **additional reserves?**

152 A. Yes. In response to DPU Data request 5.26, the Company indicated that additional  
153 reserves would need to be carried in all hours for wind integration. In other words,  
154 the Company never considered whether existing reserves in some hours would be  
155 sufficient to cover the needs of wind integration. The Wind Study assumed that all  
156 hours would require additional reserves.

157 **Q. Are there hours in which additional reserves would not be needed?**

158 A. Yes. In many early morning hours, when customer requirements are low, but  
159 many generating units cannot be removed from service, there are generally excess  
160 reserves, which could be used for wind integration. The Company has made the  
161 blanket assumption that such hours do not exist. This will cause the Wind Study  
162 to exaggerate the level of reserves required for wind integration.

163 **Q. Are there other problems with the Wind Study?**

164 A. Yes. Several parties have raised issues with the Company's study. A major  
165 problem with the study is its use of estimated wind data rather than actual  
166 recorded wind data. Hopefully the Company will correct this issue in future  
167 studies.

168 **Q. What adjustments to NPC do you recommend concerning wind integration**  
169 **costs?**

170 A. Adjustments 1 and 2 in Table 1 concern wind integration.

171 **Q. What is Adjustment 1 in Table 1?**

172 A. Adjustment 1 removes the 5% wind contingency reserve that the Company has  
173 included in GRID in this case and in previous rate cases. The 5% wind  
174 contingency means that GRID will carry operating reserves equal to 5% of  
175 installed wind capacity to cover the potential complete loss of 5% of all installed  
176 wind facilities. However, based on the Wind Study, the Company has in this rate  
177 case increased the GRID reserve requirement to cover the complete intermittent  
178 nature of wind generation. In other words, the increase in the GRID reserve

179 requirement covers all the potential losses of wind generation, and the 5% wind  
180 contingency is redundant. Leaving the 5% wind contingency in place, along with  
181 the increase in reserves, would result in a double-count of reserves to cover the  
182 loss of wind generation. Removing the 5% wind contingency reduces system NPC  
183 by \$0.9 million and Utah NPC by \$0.4 million.

184 **Q. What is Adjustment 2 in Table 1?**

185 A. Adjustment 2 reduces the reserve requirement in GRID to reflect the actual  
186 reserves carried by the Company's system, as discussed above. This adjustment  
187 reduces system NPC by \$8.6 million and Utah NPC by \$3.7 million.

188

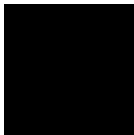
189           **MARKET CAPS**

190   **Q.    Has the Company limited interaction with the wholesale power markets in**  
191   **GRID?**

192   A.    Yes. As in the previous rate case, the Company has included in GRID hourly  
193        limitations (above and beyond transmission limitations) that restrict the size of  
194        transactions with the major wholesale markets.

195   **Q.    Are these limits appropriate?**

196   A.    No. These limits have restricted the generation of the Company's coal plants to a  
197        level lower than the average generation over the most recent 48 month period, as  
198        shown in the following chart.



199

200   **Q.    How have you addressed this problem in your NPC adjustments?**

201   A.    I removed the Company's market caps in all of the major markets, except for the  
202        Mona market, allowing GRID to produce additional coal generation for sale into  
203        these markets. Adjustment 3 reflects this change to market caps. The adjustment  
204        reduces system NPC by \$8.1 million and Utah NPC by \$3.7 million.

205           **CALIFORNIA ISO FEES**

206   **Q.    What is the issue concerning California ISO fees?**

207 A. The Company has included in the firm wheeling charges within NPC, fees paid to  
208 the California ISO to allow transactions between the Company and the California  
209 market. The fees include costs for grid management, reserve energy, congestion  
210 charges and charges to move energy through the California ISO grid. In the  
211 previous rate case, similar California ISO fees were included in NPC, but no  
212 transactions with the California ISO appeared in the NPC.

213 **Q. Has the Company made changes in this case concerning the California ISO?**

214 A. Yes, they have. In response to criticism from the parties in the previous rate case,  
215 the Company has inserted California ISO transactions into GRID, based on  
216 “historical levels”<sup>5</sup>. Unfortunately, the California ISO transactions are not  
217 financially beneficial.

218 **Q. How did you conclude that these transactions are not financially beneficial?**

219 A. I removed the California ISO transactions from GRID and developed NPC using  
220 this modified GRID database. This process showed that NPC are lower without  
221 the California ISO transactions.

222 **Q. What do you conclude from this analysis?**

223 A. Ratepayers are being asked to pay millions of dollars to gain access to the  
224 California market, but that access provides no benefit and actually increases costs

---

<sup>5</sup> Lines 174-178 on page 10 of Mr. Duvall’s direct testimony

225 for ratepayers. Adjustment 4 would correct this situation by removing the  
226 California ISO fees and the California ISO transactions. System NPC would be  
227 reduced by \$6.0 million and Utah NPC would be reduced by \$2.6 million.

228 **DC INTERTIE**

229 **Q. What is the issue concerning the DC Intertie?**

230 A. As with the California ISO issue, in the previous rate case the Company included  
231 costs to access the DC Intertie, but failed to include any connection to the DC  
232 Intertie within GRID. In response to criticism from the parties in the previous rate  
233 case, the Company included a DC Intertie connection within GRID in this case.

234 **Q. Does the new connection provide benefits?**

235 A. Yes, it does. GRID utilizes the DC Intertie connection to purchase power from the  
236 Nevada Oregon Border market. However, the benefit of these purchases is  
237 inconsequential compared to the costs required to use the DC Intertie.

238 **Q. What are the relevant costs?**

239 A. The cost included in NPC to utilize the DC Intertie is [REDACTED] million. The benefit of  
240 the transactions that result from this access is only [REDACTED].

241 **Q. What do you recommend?**

242 A. I recommend the Commission remove the cost of the DC Intertie, net of the  
243 benefits of the GRID transactions that utilize the DC Intertie. This would be the

244 result of adopting Adjustment 5 in Table 1. With this adjustment, system NPC is  
245 reduced by \$4.7 million and Utah NPC is reduced by \$2.0 million.

246 **CENTRALIA POINT TO POINT**

247 **Q. What is the issue concerning the Centralia Point to Point wheeling contract?**

248 A. Although there are substantial costs included in NPC for the Centralia Point to  
249 Point contract, there are no transactions included in NPC that require the contract,  
250 as shown by the Company's response to OCS Data Request 2.91, which is  
251 attached as Exhibit 4.2.

252 **Q. What do you recommend?**

253 A. I recommend that the Commission exclude the costs of the Centralia Point to  
254 Point contract from NPC. This is Adjustment 6 in Table 1, which reduces system  
255 NPC by \$1.1 million and Utah NPC by \$0.5 million

256



257 **HEAT RATE DERATION**

258 **Q. Please describe the heat rate deration issue.**

259 A. To account for unplanned outages on generating units, the GRID model reduces  
260 the maximum capability of generating units to reflect the unplanned outage rate.  
261 For example, if a 100 megawatt generating unit has an unplanned outage rate of  
262 10% (is unavailable 10% of the time due to unplanned outages), GRID sees the  
263 unit as a 90 megawatt generating unit. This methodology assures that the unit will  
264 produce the correct amount of energy in GRID, but has the additional impact of  
265 improperly increasing the generating unit's heat rate.

266 **Q. Why does this method increase the heat rate?**

267 A. Generating units are most efficient (or have lowest heat rate) at maximum  
268 capability. In GRID, the deration of the unit to 90 megawatts causes GRID to  
269 utilize a less efficient heat rate, namely the heat rate at 90 megawatts rather than  
270 the heat rate at 100 megawatts. This is the problem that should be addressed.

271 **Q. Why is this a problem?**

272 A. If the unplanned outages are full unit outages (in which the generating unit is  
273 completely unavailable), the reality is that the unit would operate 90% of the time  
274 at full capability (100 megawatts) and would not operate at all 10% of the time.  
275 So the heat rate would be the most efficient heat rate that is achieved at 100  
276 megawatts, rather than the less efficient heat rate at 90 megawatts. So GRID will

277 improperly apply higher (less efficient) heat rates, causing the unit to consume  
278 excessive fuel.

279 **Q. Do other problems arise from the capacity deration?**

280 A. Yes. It has been argued in the two previous RMP general rate cases, that the  
281 minimum operating capacity of the generating unit should also be derated by the  
282 same percentage. However, this issue presents problems, such as allowing the unit  
283 to operate at lower levels than are physically possible. In any case, the dollar  
284 impact of the corresponding deration of the minimum capacity is very small.

285 **Q. Was this issue addressed in previous rate cases?**

286 A. Yes, it was. In the 2009 general rate case, the Commission directed the Company,  
287 DPU, the Office of Consumer Services (OCS) and other interested parties to  
288 review alternatives to this issue, review actual operations in comparison to  
289 modeling predictions, and work to understand the extent of the issue<sup>6</sup>.

290 **Q. Did such meetings occur?**

291 A. Yes. The DPU organized a phone conference including the Company and Randy  
292 Falkenburg representing the OCS. It was agreed that the Company and OCS  
293 would submit proposals for review by all the parties. However, only OCS  
294 provided a proposal – the Company did not.

---

<sup>6</sup> See page 57 of the Commission's order in Docket No. 09-035-23

295 **Q. What do you recommend?**

296 A. I recommend the heat rate curves in GRID be modified so that the generating unit  
297 heat rates at the maximum capability (which are derated by the forced outage rate)  
298 are the heat rates at maximum capability. Adjustment 7 accomplishes this result.

299 **Q. Does this adjustment improve the accuracy of the resulting NPC?**

300 A. Yes, it does. Comparing the actual average heat rates for coal units and natural  
301 gas combined cycle units to the GRID average heat rates in the Company's NPC  
302 and my modified GRID result in the following chart, the Company's GRID heat  
303 rates are higher than actual, and the heat rates resulting from the application of the  
304 heat rate deration are more in-line with actual heat rates.

305



306 **Q. What do you recommend?**

307 A. I recommend that the Commission require the deration of generating unit heat  
308 rates, which would result in Adjustment 7. This adjustment would reduce system  
309 NPC by \$4.7 million and Utah NPC by \$2.0 million.

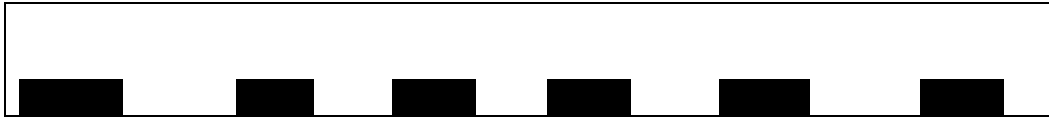
310 **GAS UNITS**

311 **Q. What is the concern with the Company's modeling of gas-fired generating**  
312 **units within GRID?**

313 A. There are several problems with the way the Company has modeled the operation  
314 of the gas-fired generating units within GRID for the computation of NPC. For  
315 one, the Company forces some of the combined cycle gas-fired generating units to  
316 operate in all hours that they are available, regardless of whether this is the most  
317 economic choice. Also, the Gadsby peaking units (or CTs) are forced to operate in  
318 all high-load hours regardless of economics. And finally, the Company assumes  
319 that the Chehalis combined cycle generating unit no longer provides reserves in  
320 the GRID model.

321 **Q. Why do you take issue with the Company forcing the gas-fired generating**  
322 **units to operate in GRID?**

323 A. This is not the way that these generating units operate in practice. The following  
324 table compares the actual number of operating hours in the calendar year 2011 to  
325 the hours of operation in GRID:



326

327 **Q. What do you conclude from this information?**

328 A. The simulation of the operation of the gas-fired generating units in the Company's  
329 GRID model is unrealistic – many of the units are forced to operate more than the  
330 units would actually operate. This problem causes an unsubstantiated increase in  
331 NPC.

332 **Q. Is there some relationship to the problem with Chehalis?**

333 A. Yes there is. When the Company acquired the Chehalis generating unit, the  
334 Company claimed as one benefit from the acquisition the unit's ability to provide  
335 operating reserves. However, in the previous rate case and in this case, Chehalis  
336 provides no operating reserves in the Company's GRID model. This means that  
337 other generating units must make up the operating reserves that would normally  
338 be produced by Chehalis.

339 **Q. How did this problem with Chehalis arise?**

340 A. Chehalis is located in the BPA balancing area and on April 30, 2010, BPA  
341 rejected the Company's request for dynamic transfer capability due to Chehalis  
342 lacking Automatic Generation Control (AGC). According to the Company, this  
343 means that Chehalis can no longer provide reserves.

344 **Q. Has the Company made clear the reasons for this change?**

345 A. The Company has provided the correspondence with BPA, but it is not clear  
346 exactly why the situation changed in April 2010.

347 **Q. Is it common for combined cycle plants such as Chehalis to lack AGC?**

348 A. No, it is not. Combined cycle plants are generally fitted with AGC so that the  
349 plants can be precisely controlled through the Company's dispatch center. The  
350 lack of AGC at Chehalis not only restricts the plant's ability to provide reserves,  
351 but limits the plant's ability to follow load, provide regulation and to operate  
352 economically within the system dispatch. According to Mr. Duvall, the Company  
353 must now "block schedule Chehalis prior to the hour"<sup>7</sup>.

354 **Q. What is block scheduling?**

355 A. This means that the Company must select one level (such as 200 megawatts) and  
356 load Chehalis to that one level throughout each hour. Changes in generation  
357 within an hour are not allowed.

358 **Q. Does this bring into question the economics of the plant?**

359 A. This situation certainly reduces the value of Chehalis to the Company and  
360 ratepayers, if it cannot be corrected.

361 **Q. Did the Company previously state that Chehalis would provide reserves?**

---

<sup>7</sup> See line 4, page 20 of Mr. Duvall's rebuttal testimony in WUTC Docket No. UE-100749

362 A. Yes. In Docket No. 08-035-35, in which the Company requested approval to  
363 acquire Chehalis, Mr. Stefan Bird testified as follows concerning the  
364 characteristics of Chehalis:

365 Ownership of the Plant allows the Company full discretion in the dispatch  
366 of the Plant. Energy from the Plant will be dispatched on a forward, day-  
367 ahead basis, with real-time optimization of the Plant's usage. Dispatch  
368 flexibility will give the Company an additional System resource with the  
369 ability to provide operating reserves, load-following reserves and  
370 automatic generation control. This System flexibility will provide  
371 increasing benefit to the Company as load grows, the Company's existing  
372 flexible contracts expire, and the existing and planned wind resources  
373 added to the System to support existing and future renewable portfolios  
374 standards increase the Company's requirement for each of the operational  
375 characteristics provided by the Plant.<sup>8</sup>

376 **Q. As things stand today, does the Company have full discretion in the dispatch**  
377 **of Chehalis, as claimed by Mr. Bird?**

378 A. No.

379 **Q. Can the Company perform real-time optimization of Chehalis?**

380 A. No.

381 **Q. Can Chehalis provide operating reserves?**

382 A. No.

383 **Q. Can Chehalis provide load-following reserves?**

384 A. No.

385 **Q. Does Chehalis provide automatic generation control?**

---

<sup>8</sup> See page 6, lines 129-130 and page 7, lines 131-138 of the direct testimony of Stefan A. Bird in Docket No. 08-035-35.

386 A. No.

387 **Q. Will Chehalis assist the Company in providing additional flexibility as wind**  
388 **facilities are added to the System?**

389 A. No.

390 **Q. What is the impact on the NPC of the Chehalis reserves problem and the**  
391 **forced running of other gas-fired generating units?**

392 A. If these problems are corrected in GRID, the system NPC is reduced by \$2.8  
393 million (\$1.2 million for Utah), which is Adjustment 8 in Table 1.

394 **Q. Does your GRID analysis reflect all of the currently existing limitations on**  
395 **the operation of Chehalis?**

396 A. No, it does not. My GRID analysis only considers the loss of the ability of  
397 Chehalis to provide operating reserves. The block scheduling limitation on  
398 Chehalis and other limitations are not reflected in this GRID analysis. To my  
399 knowledge, GRID does not provide an option for block scheduling generating  
400 resources.

401 **Q. What do you recommend?**

402 A. I recommend that the Commission adopt Adjustment 8 in Table 1. In addition, the  
403 Commission should require the Company to estimate the impact of the other  
404 restrictions on Chehalis, and further reduce NPC by that amount.

405 **STARTUP ENERGY**



406 **Q. Please describe the issue with startup energy.**

407 A. Whenever a generating unit returns to operation after a period of inactivity, there  
408 is a period of time in which the unit is producing energy but has not yet reached  
409 its normal minimum operating level. The GRID simulation, like most such  
410 computer models, does not simulate this start-up period.

411 **Q. Does the Company include the cost of the energy produced during the start-**  
412 **up period in NPC?**

413 A. Yes it does. However, the Company fails to include a credit for the corresponding  
414 energy produced during the start-up period. So ratepayers are paying for energy  
415 without receiving the benefit of that energy.

416 **Q. How would you correct this situation?**

417 A. Adjustment 9 in Table 1 would provide an appropriate credit in NPC for the  
418 energy produced during the start-up period of the Company's combined cycle  
419 units. On a system basis, the reduction to NPC is \$0.6 million. For Utah, the NPC  
420 reduction is \$0.3 million.

421 **LINE LOSSES**

422 **Q. Please describe the issue concerning line losses.**

423 A. The Company has included within the GRID topology a new high-voltage  
424 transmission line – the Populus to Terminal line<sup>9</sup>. The addition of new high-

---

<sup>9</sup> Lines 351-353 on page 18 of Mr. Duvall's direct testimony

425 voltage transmission lines will normally result in a reduction to the line losses that  
426 are experienced. As shown in the Company responses to data requests in Exhibit  
427 DPU 4.3, the Company claimed that this new transmission line would result in  
428 reduced line losses, but has failed to produce any study concerning the claimed  
429 reduction in line losses.

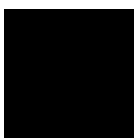
430 **Q. When was the new transmission line placed in service?**

431 A. According to the Company, the new line was placed in service on November 19<sup>th</sup>,  
432 2010.

433 **Q. Then will the reduced losses from the line be reflected in the line losses used**  
434 **in this case?**

435 A. Since the line loss rate used in this case is the average of the five years 2006  
436 through 2010, the impact of the new line will be inconsequential - only one month  
437 and 10 days out of five years. This means that the Company's NPC does not  
438 properly reflect the loss reductions arising from the new line, even though that  
439 new line is assumed to be in service throughout the test year. The following chart  
440 compares the annual losses for 2006 through 2010, the line loss rate used by the  
441 Company in GRID, the 2011 losses and the average of the most recent three  
442 years.

443



444 **Q. What do you recommend to correct this situation?**

445 A. The impact of the reduction in line losses from the new line is fully reflected in  
446 the 2011 calendar year losses. I recommend that the Commission utilize for NPC  
447 computations the average line losses for the three calendar years 2009, 2010 and  
448 2011. This is Adjustment 10 in Table 1, which reduces system NPC by \$4.2  
449 million and Utah NPC by \$1.8 million.

450

451 **COMPANY UPDATE TO NPC**

452 **Q. What concerns do you have with the Company's May 11 update to NPC?**

453 A. The Company's update is extremely complex and essentially requires that the  
454 participating parties start over with their analysis of NPC. One of the updates –  
455 the revised forward price curves – impacts nearly every aspect of NPC. However,  
456 the filing date of the update in this case makes it impossible to receive Company  
457 responses to any data requests prior to the deadline for filing direct testimony.

458 **Q. What problems result from the NPC update?**

459 A. The DPU and other parties may be placed in the position of having to defer  
460 testimony concerning the NPC update until rebuttal, and are therefore deprived of  
461 one round of testimony.

462 **Q. What do you recommend?**

463 A. I recommend that the Commission require the Company to file any NPC updates  
464 at least six weeks prior to the deadline for participants to file direct testimony, to  
465 allow parties the opportunity to process the updated NPC, file data requests, and  
466 receive Company responses to data requests in a timely manner.

467 **Q. Does this complete your testimony?**

468 A. Yes it does.