

1 **Q. Please state your name, business address and present position with Rocky**
2 **Mountain Power (the Company), a division of PacifiCorp.**

3 A. My name is Peter C. Eelkema, my business address is 825 N.E. Multnomah, Suite
4 600, Portland, Utah 97232, and my present position is Lead/Senior Consultant,
5 Load and Revenue Forecasting.

6 **Qualifications**

7 **Q. Please briefly describe your education and business experience.**

8 A. I received an undergraduate degree in Economics from San Jose State University
9 in San Jose, California. I also received a PhD in Economics from the University
10 of Kansas.

11 From September 1989 to October 1993, I was a Managing Research
12 Economist at the Kansas Corporation Commission. From October 1993 to March
13 1996, I was an Economist at the Nevada Office of Advocate for Customers of
14 Public Utilities. From March 1996 to March 1998, I was a Senior Economist,
15 Forecasting, at Sierra Pacific Power/Nevada Power Company, and from March
16 1998 to January 2005, I was a Staff Economist, Forecasting at Sierra Pacific
17 Power/Nevada Power Company. From January 2005 to May 2008, I was a
18 Consultant, Load and Revenue Forecasting at PacifiCorp. I was promoted to my
19 current position in May 2008.

20 **Q. Please describe your present duties.**

21 A. I am the senior consultant of the Load and Forecasting group. We are responsible
22 for the development of the forecasts of kilowatt-hour sales, number of customers,
23 system loads, and peaks for the Company's six retail jurisdictions.

24 **Q. Have you previously testified before a regulatory commission?**

25 A. Yes. I have testified before the Utah, Wyoming, Nevada Public Service
26 Commissions, and the Kansas Corporation Commission.

27 **Purpose of Testimony**

28 **Q. Please explain the purpose of your testimony in this proceeding.**

29 A. I describe how we developed the forecasts of the number of customers and bills,
30 kilowatt-hour sales at the meter (“sales”), and system loads and system peak loads
31 at the system input level (“loads”) for the twelve-month period ending June 30,
32 2010. We produce these forecasts for all six states in which the Company serves
33 retail customers and are necessary for the development of inter-jurisdictional
34 allocation factors, forecasted revenues, and net power costs. In addition to the
35 class level forecasts for bills and sales, we have developed a forecast of bills and
36 kilowatt-hour sales by rate schedule for Utah.

37 **Q. How were the forecasts utilized in preparation of this general rate case?**

38 A. The forecasted loads for Utah for the twelve months ended June 2010 were used
39 by Company witness Mr. Gregory N. Duvall to calculate Utah net power costs,
40 and by Mr. Steven R. McDougal to calculate the revenue requirement and
41 jurisdictional allocation factors. Additionally, forecasted sales by rate schedule
42 are used by Mr. William R. Griffith and Mr. C. Craig Paice to allocate costs
43 between customer classes and to design rates which correctly reflect the cost of
44 service. The sum of energy by rate schedule ties to the forecasted energy by
45 customer class.

46

47 **Q. Please provide the forecasted energy sales.**

48 A. Table 1 provides the forecasted energy sales for the test period.

49 **Table 1, Test Period Sales Forecast (MWh)**

	July 2009 to June 2010	
	Total Company	Utah
Residential	15,772,148	6,616,982
Commercial	15,902,388	7,491,422
Industrial	19,744,434	7,314,906
Irrigation	1,346,600	188,820
Public Authority	436,110	436,110
Lighting	139,740	76,070
Total	53,341,420	22,124,310

50 **Summary of Changes in Forecast Assumptions**

51 **Q. Does this forecast employ the same methodology as presented to the Utah**
52 **Public Service Commission in the last general rate case in Docket 08-035-38?**

53 A. Yes. This is the same methodology that we used to develop the forecast presented
54 by the Company in my supplemental direct testimony in the last general rate case
55 in Utah, Docket. In summary, this methodology consists of first developing a
56 model-driven forecast of monthly sales. I then adjusted the model driven results to
57 reflect the effect of the economic downturn. This sales forecast becomes the basis
58 of the load forecast by adding line losses. The monthly loads are then spread out
59 to each hour to produce the hourly load forecast. I describe this forecasting
60 process in more detail later in my testimony.

61 **Q. Please summarize major changes in forecast assumptions for the Company's**
62 **sales and load forecast.**

63 A. There are only five notable changes in forecast assumptions when compared to
64 the forecast in the supplemental filing in the previous general rate case in Docket
65 No. 08-035-38:

- 66 i. We performed analyses and updated adjustments as appropriate to account for
67 the impact of current economic conditions. This adjustment is discussed later
68 in my testimony.
- 69 ii. We updated the historical data period used to develop the monthly retail sales
70 forecasts to include January 1997 through January 2009.
- 71 iii. We updated the historical data period used to develop the monthly peak
72 forecasts to include January 1997 through December 2008.
- 73 iv. We updated the economic drivers from IHS Global Insight using the most
74 recent information available for each of the Company's jurisdictions.
- 75 v. We updated the forecast of individual industrial customer usage based on the
76 best information available as of January 2009.

77 **Q. Please describe how the impact of the current economic conditions is**
78 **reflected in the Company's sales forecast for Utah.**

79 A. We developed the Company's sales forecast model using historical sales data
80 ending January 2009, and the most recent economic data available. We adjusted
81 the model-driven results for the industrial class to reflect the economic slowdown
82 in the industrial class. We did not adjust the model driven results for the other
83 customer classes. I will discuss the adjustment to the industrial class later in my
84 testimony.

85 **Forecasts for Non-Industrial Customer Classes**

86 **Q. How are monthly sales forecasts developed by customer class?**

87 A. We develop monthly sales forecasts as a product of two separate forecasts: the
88 number of customers, and sales per customer. We use this methodology for all

89 customer classes except for the industrial customer class.

90 **Q. How are the forecasts for number of customers developed?**

91 A. We forecast all customer classes using regression models based on the January
92 1997 to January 2009 time period. For the residential class, we develop the
93 forecast of number of customers with IHS Global Insight's forecast of each state's
94 number of households as the major driver. For the commercial class, we develop
95 the forecast for number of customers with the forecasted residential customer
96 numbers used as the major driver. For the forecast, we used the most recently
97 available economic drivers from IHS Global Insights which were released in
98 December 2008. For irrigation and street lighting classes the forecast of number
99 of customers is fairly static and we developed these forecasts using regression
100 models without any economic drivers.

101 **Q. How is average use per customer for customer classes forecasted?**

102 A. We model sales per customer for the residential class through a Statistically
103 Adjusted End-use ("SAE") model, which combines the end-use modeling
104 concepts with traditional regression analysis techniques. Major drivers of the
105 SAE-based residential model are heating and cooling related variables, end-use
106 information such as equipment shares, saturation levels and efficiency trends, and
107 economic drivers such as household size, income and energy price.

108 For the commercial class, we forecast sales per customer using regression
109 analysis techniques with non-manufacturing employment used as the major
110 economic driver in addition to weather-related variables.

111 For other classes, we forecast sales per customer through regression
112 analysis techniques using time trend variables.

113 **Industrial Class Forecasts**

114 **Q. How does the Company forecast sales for the industrial customer class?**

115 A. The industrial customers are separated into three categories: i) existing customers
116 that are tracked by the Customer and Community Managers (“CCMs”); ii) new
117 large customers or expansions by existing large customers; and iii) industrial
118 customers that are not tracked by the CCMs. Customers are tracked by the CCMs
119 if they have a peak load of one megawatt or more at a single site.

120 We develop the forecast for the first two categories through the data
121 gathered by the CCM assigned to each customer. The CCMs have ongoing direct
122 contact with large customers and are in the best position to know about the
123 customer’s plans for changes in business processes, which might impact their
124 energy consumption.

125 We develop the portion of the industrial forecast related to new large
126 customers and expansion by existing large customers based on direct input of the
127 customers, forecasted load factors, and the probability of the project occurrence.

128 Smaller industrial customers are more homogeneous and are modeled
129 using regression analysis with trend and economic variables. Manufacturing
130 employment is used as the major economic driver.

131 We develop the total industrial sales forecast by aggregating the forecast
132 for the three industrial customer categories.

133 **Q. Why do you forecast industrial sales using a different methodology than the**
134 **other customer classes?**

135 A. We forecast this class differently because of the diverse makeup of the customers
136 within the class. In the industrial class, there is no “typical” customer. Large
137 customers have very diverse usage patterns and power requirements. It is not
138 unusual for the entire class to be strongly influenced by the behavior of one
139 customer or a small group of customers.

140 In contrast, customer classes that are made up of mostly smaller,
141 homogeneous customers are best forecasted as a use per customer multiplied by
142 number of customers. Those customer classes are generally composed of many
143 smaller customers that have similar behaviors and usage patterns. No small group
144 of customers, or single customer, influences the movement of the entire class.
145 This difference requires the different processes for forecasting.

146 **Q. Please describe how the impact of the current economic conditions is**
147 **reflected in the Company’s industrial sales forecast for Utah.**

148 A. We adjusted the model-driven results for the industrial class to reflect the
149 economic slowdown in the industrial class based primarily on a review of the
150 reductions in usage experienced as an aftermath of the 2000 and 2001 recession
151 and discussions with the Company’s personnel that work directly with the large
152 industrial customers. This review resulted in an additional reduction to Utah
153 industrial sales of 703,056 megawatt-hours (MWhs), or 3.2 percent of Utah sales
154 as compared to the model driven results.

155

156 **Hourly Load Forecast**

157 **Q. Please outline how you develop the hourly load forecast.**

158 A. After we develop the forecasts of monthly energy sales by customer class, we
159 develop a forecast of hourly loads in two steps:

160 First, we develop monthly and seasonal peak forecasts for each state. The
161 monthly peak model uses historic peak-producing weather for each state, and
162 incorporates the impact of weather on peak loads through several weather
163 variables which drive heating and cooling usage. These weather variables include
164 the average temperature on the peak day and lagged average temperatures. The
165 peak forecast is based on average monthly historical peak-producing weather for
166 the period 1990-2007.

167 Second, we obtain hourly load forecasts for each state from hourly load
168 models using state-specific hourly load data and daily weather variables. We
169 develop hourly loads using a model that incorporates the twenty-year average
170 temperatures, a typical weather pattern for each year, and day-type variables such
171 as weekends and holidays. The hourly loads are adjusted for line losses and
172 calibrated to monthly and seasonal peaks.

173 **Q. How are monthly system coincident peaks derived?**

174 A. After we develop the hourly load forecasts for each state, hourly loads are
175 aggregated to the total system level. The system coincident peaks can then be
176 identified as well as the contribution of each jurisdiction to those monthly peaks.

177

178 **Forecasts by Rate Schedule**

179 **Q. Are there any additional forecasts that you created for this proceeding?**

180 A. Yes. As mentioned earlier, Mr. Griffith and Mr. Paice require two additional
181 forecasts that are based on the kWh sales forecast and the number of customers
182 forecast. Once the kWh sales forecast is complete, it must be applied to individual
183 rate schedules to forecast kWh sales by rate schedule. In addition, the forecast of
184 number of customers must be expressed in number of bills.

185 **Q. How are rate schedule level forecasts produced?**

186 A. This forecast was carried out in several steps. First, we calculate the ratio of sales
187 by rate schedule to sales by customer class. Second, using regression analysis, we
188 project the ratio for the test period. Third, we multiply the ratio by the customer
189 class sales to produce the sales by rate schedule.

190 **Q. How is the number of bills for each schedule forecasted?**

191 A. Similar to the forecast of the rate schedule sales forecast, the rate schedule bill
192 forecast is carried out in several steps. First, we calculate the ratio of bills to sales
193 by rate schedule to bills by customer class. Second, we forecast this ratio for the
194 test period based on the regression results. Third, we multiply the ratio by the
195 customer class bills to produce the bills by rate schedule.

196 **Summary of Results**

197 **Q. How does the sales forecast for the twelve months ended June 30, 2010,**
198 **compare to the weather normalized MWh sales for the December 2008 base**
199 **period?**

200 A. Table 2 shows that sales for the total Company, test period forecasted sales are 0.7

201 percent less than weather normalized sales in 2008.

202 **Table 2, Total Company Sales Comparison (MWh)**

	July 2009 to June 2010	
	2008 Actual	GRC Forecast
Residential	15,692,659	15,772,148
Commercial	15,922,895	15,902,388
Industrial	20,128,170	19,744,434
Irrigation	1,366,540	1,346,600
Public Authority	449,314	436,110
Lighting	141,122	139,740
Total	53,700,700	53,341,420

203 Table 3 shows that sales for Utah, forecasted test period sales are 1.0 percent less
204 than weather normalized sale in 2008.

205 **Table 3, Utah Sales Comparison (MWh)**

	July 2009 to June 2010	
	2008 Actual	GRC Forecast
Residential	6,334,535	6,616,982
Commercial	7,363,541	7,491,422
Industrial	7,913,408	7,314,906
Irrigation	212,599	188,820
Public Authority	449,314	436,110
Lighting	76,652	76,070
Total	22,350,050	22,124,310

206 **Q. How does the sales forecast for the twelve months ended June 30, 2010,**
207 **compare to the sales forecast in the last general rate case supplemental filing**
208 **in Docket 08-035-38?**

209 A. I compared the test period forecasted sales in this general rate case to forecasted
210 sales for the same time period that was prepared in conjunction with the
211 supplemental filing in Docket No. 08-035-38. As shown in Table 5, the Utah sales
212 forecast has gone down by about 1.8 percent. And, as shown in Table 4, the total
213 Company sales have gone down by an even larger percentage, about 3.6 percent.

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Table 4, Total Company Sales Forecast Comparison (MWh)

	July 2009 to June 2010 GRC Forecasts	
	Current	Previous
Residential	15,772,148	15,819,314
Commercial	15,902,388	16,882,187
Industrial	19,744,434	20,855,762
Irrigation	1,346,600	1,337,010
Public Authority	436,110	430,830
Lighting	139,740	151,090
Total	53,341,420	55,325,103

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Table 5, Utah Sales Forecast Comparison (MWh)

	July 2009 to June 2010 GRC Forecasts	
	Current	Previous
Residential	6,616,982	6,460,750
Commercial	7,491,422	8,091,793
Industrial	7,314,906	7,264,613
Irrigation	188,820	185,630
Public Authority	436,110	430,830
Lighting	76,070	88,420
Total	22,124,310	22,522,036

217 **Q. How are the actual sales tracking the forecast in 2009?**

218 A. Very well. Table 6 shows that for the first five months of 2009, actual total
219 Company weather normalized sales are about 2.1 percent below the current
220 forecast for the same period of time.

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Table 6, Total Company Sales Forecast (MWh)

	January to May 2009	
	Actual	GRC Forecast
Residential	6,380,346	6,528,818
Commercial	6,352,237	6,302,028
Industrial	7,703,784	8,080,624
Irrigation	248,685	228,320
Public Authority	180,684	176,740
Lighting	60,864	59,850
Total	20,926,600	21,376,380

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Table 7 shows that for the first five months of 2009, actual Utah weather

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normalized sales are about 1.6 percent below the current forecast for the same

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period of time.

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Table 7, Utah Sales Forecast (MWh)

	January to May 2009	
	Actual	GRC Forecast
Residential	2,417,528	2,472,984
Commercial	2,937,628	2,896,234
Industrial	3,016,689	3,143,002
Irrigation	33,385	39,520
Public Authority	180,684	176,740
Lighting	33,385	33,070
Total	8,619,299	8,761,550

227

Q. Do you consider this sales and load forecasts to be reasonable?

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A. Yes. I believe it is a reasonable forecast. This forecast has an equal probability of

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under forecasting or over forecasting sales. As shown in Tables 6 and 7 above,

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this forecast is tracking about two percent above total Company weather

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normalized sales and is tracking about 1.6 percent above weather normalized Utah

232

sales.

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Q. Does this conclude your testimony?

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A. Yes.