

1 **Q. Please state your name.**

2 A. My name is Scott D. Thornton.

3 **Q. What is your business address and by whom are you employed?**

4 A. My business address is 1407 W North Temple Street, Salt Lake City, Utah. I am  
5 employed by Rocky Mountain Power (the “Company”).

6 **Q. What is your position with Rocky Mountain Power Company and what are  
7 your responsibilities?**

8 A. My current position is Manager, Metered Data Management in the Metering  
9 Business Unit. I am responsible for the development of all class load profile  
10 estimates utilized in cost allocation, rate design, forecasting and special studies. I  
11 direct the design, implementation, and maintenance of all load studies performed  
12 by both Rocky Mountain Power and Pacific Power Companies. I am responsible  
13 for the development of load coincidence factors and for the determination of the  
14 distribution system peak for the Company.

15 **Q. What is your educational and work experience?**

16 A. I have Bachelors Degrees in Accounting and Business Administration/ Economics  
17 from Westminster College. Additionally, I have a Masters Degree in Business  
18 Administration from Brigham Young University. I have over 29 years of  
19 experience with the Company, 24 of those years associated with load research  
20 activities.

21 **Purpose of Testimony**

22 **Q. What is the purpose of your rebuttal testimony?**

23 A. My rebuttal testimony is in response to the Testimony of UIEC witness Mr.

24 Maurice Brubaker and CCS witness Mr. Paul Chernick. My rebuttal will focus on  
25 the reliability of sample estimates used in this case to support cost allocation  
26 recommendations, as well as Mr. Brubaker's assertion that any difference  
27 between class load totals and the corresponding jurisdictional loads should be  
28 rolled into the sampled rate groups.

29 **Rebuttal of Mr. Maurice Brubaker**

30 **Q. In his testimony Mr. Brubaker recommends that the Company's load**  
31 **research data should not be used. What are his primary criticisms?**

32 A. Mr. Brubaker's overall contention is that load research samples are old and they  
33 have not been reconciled to Utah jurisdictional loads.

34 **Q. Are these valid reasons to reject the load research data?**

35 A. No, they are not. The sample data are providing load estimates consistent with  
36 what we are seeing in the billing system. Indeed, Mr. Brubaker has not provided  
37 any evidence that the data are providing inaccurate load estimates. As indicated in  
38 the Company's response to UIEC 20-4, these samples are still providing kWh  
39 estimates consistent with what we are seeing in the billing system.

40 **Sample Estimates**

41 **Q. Do you agree with Mr. Brubaker's representation that the samples for Utah**  
42 **Schedules 001, 006 and 023 are very old?**

43 A. No. While I agree with Mr. Brubaker that the sample designs were prepared a  
44 number of years ago, the sample data are current. The Schedule 6 and Schedule  
45 23 designs were constructed in 1990; the residential sample was constructed in  
46 1991. In 1999, both the residential and Schedule 6 designs were re-weighted to

47 reflect population usage at that time. In addition, both of these samples were  
48 supplemented with additional sample sites. The Schedule 23 sample, which is  
49 based on a robust 3 strata design, was not supplemented.

50 On the other hand, the sample data used to provide load estimates in this case was  
51 collected during the specified test year, January through December 2007 and is  
52 very current.

53 **Q. Mr. Brubaker asserts that RMP's load research samples have not shown to**  
54 **be representative of current customers in Utah, because many changes have**  
55 **taken place in the use of appliances (particularly central air conditioning)**  
56 **and in load shapes. Do you agree with this assertion?**

57 A. I do not. The assertion implies that a load study sample represents a static picture  
58 of load use at the time of the sample design. This is incorrect. Load profiles  
59 derived from samples today in no way reflect what we would have seen in 1992.  
60 Our customers are dynamic, ever changing. Older appliances are replaced with  
61 newer, energy efficient models. Housing is upgraded with more energy efficient  
62 insulation and windows. Evaporative coolers are being replaced with central air  
63 conditioning. Our sample group are purchasing home computers and large, flat  
64 screen TV's. These appliances are not limited to new construction stock.  
65 We know our customers are doing these things because we see it in their energy  
66 consumption. In 1999 the average residential monthly kWh/customer was  
67 637.635 kWh. The sample design was re-weighted based on that level of usage.  
68 Sample data collected during 2006 indicates that usage levels increased to 709.46  
69 kWh/month, and in 2007 the estimated usage grew to 735.67 kWh/month. As

70 shown in our response to UIEC 20-4, the 2006 residential sample kWh estimate is  
71 within 4.7 percent of the amount shown in billing records for the same period. In  
72 2007, the sample data provided an estimate within 0.8 percent of that recorded in  
73 billing records.

74 The Company's response to UIEC 20-4 presents a comparison of sample  
75 estimates vs. billed energy over similar time periods for the three samples  
76 identified by Mr. Brubaker. While the 2006 Schedule 6 sample data did not  
77 perform as well as the others, in all other cases the samples were very accurate.  
78 For the test year 2007, all samples provided acceptable load estimates based on  
79 comparisons to billing data.

#### 80 **Load Calibration**

81 **Q. Mr. Brubaker has noted that loads used in RMP's class cost of service study**  
82 **are not reconciled to the loads in the jurisdictional study. He recommends**  
83 **that the monthly loads of Schedules 1, 6 and 23 be adjusted such that a**  
84 **bottom up summation of the class loads used in this study match the**  
85 **jurisdictional monthly contribution to system peak. Do you agree that these**  
86 **samples must be adjusted to match the jurisdictional contribution?**

87 A. No. Implicit in Mr. Brubaker's recommendation is the assumption that any  
88 difference between the "bottom up" summation of sample loads and the  
89 corresponding jurisdictional loads is directly attributable to sample error,  
90 therefore any adjustment should be applied only to sample loads.

91 I offer three reasons why I believe Mr. Brubaker's recommendation should not be  
92 adopted:

- 93 1. Class loads, both census and sample, are based on load data collected at the  
94 customer site. When building up to the jurisdictional load, it is necessary to  
95 first adjust the customer data by an appropriate loss factor. Loads prepared  
96 by load research are adjusted by a static annual loss factor, differentiated by  
97 the service voltage level. That is, the same adjustment is made to every  
98 hour of the day, every day of the week, for the entire year. This  
99 methodology does not recognize the effects of ambient temperature on  
100 losses. As shown in Mr. Brubaker's exhibit UIEC\_(MEB-4), the  
101 differences between class and jurisdictional loads follows a seasonal  
102 pattern which appears correlated to seasonal temperature. During the hot  
103 days of summer, losses are greater and during the cold days of winter,  
104 losses are less. Losses are applied to all class load studies, not just the  
105 samples identified by Mr. Brubaker. If the difference identified by Mr.  
106 Brubaker is deemed to be related to losses, any difference should be  
107 applied to all customer classes.
- 108 2. Losses associated with wholesale sales are reflected in the jurisdictional  
109 loads. If all of those losses were assigned to the sampled loads, it would  
110 overstate their share of system loads. We have addressed this in data  
111 responses in previous cases.
- 112 3. On July 1, 2002, the Load Research Working Group, chaired by the  
113 Committee of Consumer Services, submitted a report to the Utah Public  
114 Service Commission. Among other items in the report, the problems

115 associated with comparing class load data to jurisdictional loads was  
116 addressed. For example, the report states:  
117 “The general conclusion was that there is something occurring within the  
118 Utah Border Load that is more likely the source of the calibration problem  
119 than the load research data or the census data. The Working Group agreed  
120 that the Company should discontinue the practice of calibrating Utah load  
121 research data.”  
122 The term “calibration”, in this instance, refers to the practice of adjusting  
123 sampled loads such that the sum of the class loads is equal to the  
124 corresponding jurisdictional load.

125 **Irrigation Sample Accuracy**

126 **Q. Do you wish to comment on Mr. Chernick’s testimony concerning irrigation**  
127 **sample accuracy?**

128 A. Yes. Attachment DR CCS 10.2 (Tab PricingAdj7) of Mr. Chernick’s testimony  
129 shows a comparison between the kWh as computed from sample estimates vs.  
130 kWh derived from the Company’s billing system. For the months of May, June,  
131 July, August and September, the table indicates that irrigation sample data is  
132 overstated by 26 percent, 26 percent, 7 percent, 30 percent, and 75 percent. Based  
133 on this disparity, Mr. Chernick recommends that the sample data not be relied  
134 upon to support a major cost allocation action.

135 **Q. Do you agree with Mr. Chernick’s recommendation?**

136 A. No, I do not. For any load study, your primary goal is to produce an accurate load  
137 curve while secondly you want the sample kWh to compare favorably to billing

138 kWh. Irrigation samples present us with special problems not found with other  
139 load studies. In any given year, approximately 30 percent or better of the  
140 customers selected to participate in the load study will not be irrigating. This can  
141 have a negative effect on the accuracy of the load curve.

142 For this current irrigation study, we took steps to assure an accurate load  
143 curve in order to provide an accurate estimate of irrigation class usage at the times  
144 of the monthly system peaks. The customer selection pool was comprised only of  
145 those irrigation customers who had measurable irrigation load for two consecutive  
146 years. That one change had a huge impact on the number of sample customers  
147 who had measurable load during the test period. The reason behind the change  
148 was that it was appropriate to sacrifice sample kWh accuracy compared to billing  
149 in return for a more accurate load curve. With an accurate load curve one can then  
150 scale the magnitude of that curve up or down to match the billed kWh without  
151 changing the shape of the curve. In our study we then scaled that load curve down  
152 to match actual billed energy which produced a statistically accurate estimate of  
153 irrigation class usage at the times of the monthly system peaks.

154 To summarize, the focus of this latest irrigation load study was to provide  
155 an accurate load curve. The magnitude of that curve, utilizing typical mean-per-  
156 unit expansion of the data, would have otherwise been overstated but was  
157 corrected using billing data, thereby providing a statistically accurate estimate.  
158 We believe that these are solid irrigation load estimates, and we recommend the  
159 Commission accept them.

160

161 **Q. Does this complete your rebuttal testimony?**

162 **A. Yes, it does.**