

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

3 A. My name is Douglas N. Bennion. My business address is 1407 West North  
4 Temple, Suite 270, Salt Lake City, Utah 84116. I am the Managing Director of  
5 Network Reliability and Investment Delivery for Rocky Mountain Power.

6 **Q. Please describe your educational background and work experience.**

7 A. I received a Bachelor of Science Degree in Electrical Engineering from the  
8 University of Utah, and I am a registered professional engineer in the state of  
9 Utah. In addition to formal education, I have attended various educational,  
10 professional and electric industry seminars. I joined the Company in 1978, and  
11 during the 29 years since then I have held various engineering positions of  
12 increasing responsibility providing extensive experience working across the  
13 Company's service territory prior to assuming my current position.

14 **Q. What are your responsibilities as Managing Director of Network Reliability**  
15 **and Investment Delivery?**

16 A. I am responsible for Rocky Mountain Power's transmission and distribution  
17 (T&D) network investment planning and to assure that the Company can provide  
18 safe, economic, and reliable energy delivery to our customers. This includes  
19 prioritizing investments to manage risk and planning future T&D investments to  
20 meet customer energy needs as well as industry reliability and operation  
21 standards.

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

23 A. The purpose of my testimony is to explain the T&D capital expenditures included

24 in the general rate case, including adjustments for major planned investments  
25 through June 2009. My testimony includes an explanation of the Company's T&D  
26 capital investment plan and some challenges Rocky Mountain Power faces with  
27 respect to its T&D projects. I also explain what the Company is doing to minimize  
28 the impact of rising costs during a robust construction period.

29 **Q. Please describe Rocky Mountain Power's T&D assets in Utah.**

30 A. The Company owns and operates over 360 substations in Utah plus over 6,500  
31 miles of transmission lines and 20,200 miles of distribution lines. About 68 percent  
32 of the T&D lines are overhead conductors. The overhead transmission lines in  
33 Utah are supported by approximately 86,100 transmission poles, and the  
34 distribution lines are supported by over 483,800 distribution poles. Over 1000  
35 distribution feeder lines originate from Utah substations that serve approximately  
36 760,000 Utah customers with over 108,800 overhead distribution transformers and  
37 71,450 pad-mount distribution transformers.

38 **Q. Please describe the major T&D investments that are being added to rate base**  
39 **in this filing.**

40 A. As explained in Company witness Mr. Steven R. McDougal's testimony detailing  
41 the revenue requirement calculation, the Company is including investments  
42 through June 2009 in the forecasted test year. In my testimony I will highlight a  
43 few individual T&D capital projects with project costs in excess of \$5.0 million  
44 each and show the benefits customers will receive from them. As shown on Page  
45 8.7 of Exhibit RMP\_\_\_(SRM-1) to Mr. McDougal's testimony, the Company will  
46 place into service \$343.8 million of transmission investment and \$318.3 million of

47 Utah distribution projects through June 2009. A few of the more significant  
48 projects include:

- 49 • \$64 million for interconnection and transmission of power from the Lake Side  
50 generation project. This transmission project was placed in-service September  
51 2007.
- 52 • \$24 million for transmission line between Camp Williams and Mona for the  
53 Currant Creek generation project. This transmission project was placed in-  
54 service October 2007.
- 55 • \$43 million for the implementation of an automated meter reading system  
56 along the Wasatch Front in Utah. This project is well under way and will be  
57 placed in-service June 2008.
- 58 • \$6 million for the Business Depot of Ogden (BDO) distribution substation near  
59 Ogden, Utah. This project was placed in-service December 2007.

60 **Q. What benefits will customers derive from the four new capital investment**  
61 **projects named above?**

62 A. Each of these projects is unique, but all have the common customer benefit of  
63 improving service quality, reliability, and the delivery of power to meet customer  
64 load requirements. For example, the Lake Side project consists of rebuilding  
65 approximately 36 miles of 138 kilovolt single and double circuit transmission  
66 lines, and modifying 6 to 8 substations, all of which are needed to interconnect and  
67 integrate the 548 (average ambient temperature rated) megawatts of power  
68 generated at Lake Side near Vineyard, Utah, as a network resource for the  
69 Company. Reinforcing the 138 kilovolt transmission system at this location

70 provides additional south to north transfer capability that will improve high voltage  
71 delivery capability, reliability and service quality.

72 The Camp Williams-Mona 345 kilovolt project consists of installing  
73 approximately 42 miles of a new wire on the vacant side of existing double circuit  
74 structures, and the construction of six miles of new structures from the southern  
75 boundary of the Camp Williams Utah Army National Guard facility to the Camp  
76 Williams substation in Utah. This project is required to deliver the 525 megawatts  
77 of power generated at Currant Creek near Mona, Utah and provide additional south  
78 to north transfer capability that will improve high voltage delivery capability,  
79 reliability and service quality.

80 The mobile automated meter reading project is a new initiative to install  
81 approximately 600,000 meters along the Wasatch Front in Utah. The project,  
82 which eliminates the need for a meter reader to physically visit each residence, will  
83 reduce meter reading costs, reduce estimated meter reads, and increase billing  
84 accuracy.

85 The BDO substation is a new 138 kilovolt to 12.5 kilovolt substation  
86 installed in the Business Depot of Ogden area in Ogden, Utah. The substation  
87 consists of one 30 MVA transformer. The project will provide additional capacity  
88 to serve the rapidly growing load in the area.

89 **Q. Are all of the new T&D capital investment projects included in this filing**  
90 **necessary to provide a reliable system in Utah, even though some of the**  
91 **projects are not located in Utah?**

92 A. Yes, transmission facilities 46 kilovolt and greater are considered integrated or

93 networked across the Company's six-state system. History has revealed that a  
94 transmission interruption in certain locations, times and other circumstances can  
95 disrupt power delivery several states away. It is therefore essential that the  
96 Company complete the transmission projects included in this filing in order to  
97 provide adequate and reliable service to our Utah customers. The physical location  
98 of transmission facilities does not limit the efficiency and reliability benefits that  
99 all customers realize through an integrated, system-wide, high-voltage  
100 transmission system.

101 **Q. Please describe the Company's T&D capital investment plan.**

102 A. Rocky Mountain Power's T&D capital investment plan includes provisions for  
103 transmission access, system reinforcement and replacement, compliance, reliability  
104 replacements, and new customer connections.

105 **Q. Please describe the transmission access investment reason portion of the**  
106 **capital investment plan.**

107 A. Rocky Mountain Power must invest in transmission assets to move Company-  
108 owned generation to substations and load centers. The Company must also build  
109 transmission facilities to move power generated by others (i.e. independent power  
110 producers) to substations and load centers. In addition, the Company must build  
111 facilities that interconnect with other transmission and generation providers as it  
112 enters into contracts with customers, generators and shippers that require  
113 transmission access. This transmission infrastructure is essential to enhance  
114 efficiencies as daily and seasonal loads fluctuate.

115 **Q. Please describe the system reinforcement and replacement portion investment**  
116 **reason of the capital investment plan.**

117 A. Utah continues to grow both in the number of customers and in capacity  
118 requirements. Upgrading or replacing transformers and distribution feeders is  
119 required when circuit loading exceeds 100 percent of design guidelines. Capital  
120 investment is necessary to replace aging assets prior to failure and to upgrade the  
121 system in specific areas in order to sustain or improve existing reliability levels. As  
122 with many western utilities, a large portion of the Company's existing asset base  
123 was installed in the 1950's, 60's, and 70's, and due to the normal aging processes,  
124 these assets are nearing the point of replacement, which may be preceded by  
125 increased failures and higher maintenance costs. Assets that are targeted for  
126 replacement include obsolete oil-type circuit breakers, station transformers,  
127 electromechanical station meters and relays, sub-transmission lines, distribution  
128 lines, poles and cross-arms, switchgears, and underground cables. As Rocky  
129 Mountain Power's system ages and demand increases, these factors place  
130 additional requirements on the Company's system, and it is imperative that the  
131 Company keep pace with the service requirements that customers expect.

132 **Q. Please describe the system compliance portion of the capital investment plan.**

133 A. T&D compliance investments are those required by state and federal regulations or  
134 codes. Examples include environmental programs to mitigate bird and raptor  
135 mortality, overhead relocations or overhead to underground conversions for road  
136 construction and public works projects, Federal Communications Commission  
137 wideband mobile radio conversion to narrow band operation by 2012, and Federal

138 Energy Regulatory Commission substation security initiatives.

139 **Q. Please describe the reliability portion of the capital investment plan.**

140 A. Reliability is measured in the electric industry with metrics such as System  
141 Average Interruption Duration Index (SAIDI) and System Average Interruption  
142 Frequency Index (SAIFI). In our Service Standards Program and transaction  
143 commitments through March, 31, 2008, Rocky Mountain Power has committed to  
144 no more than 189 minutes of average customer interruption (SAIDI) and no more  
145 than 1.94 average interruptions per year (SAIFI), and the Company has committed  
146 to further improve reliability through 2011. To meet these reliability objectives and  
147 to ensure reliability to customers the Company must continue its T&D asset  
148 replacement (replace aging and deteriorated assets) and reinforcement capital  
149 investment program, through a planned asset replacement and reinforcement  
150 program. Beginning in 2007, the Company implemented a targeted reliability  
151 improvement program. Essentially, by incorporating the outage history of  
152 individual customers and circuits, we are targeting our resources towards  
153 “customers experiencing multiple interruptions” (CEMI). This allows us to more  
154 efficiently use our resources and make improvements to the pockets on circuits  
155 that have shown the worst reliability.

156 **Q. Please describe the new connection portion of the capital investment plan.**

157 A. New customer connections include residential, commercial, industrial, irrigation,  
158 other utilities, and street lighting, but residential and commercial customers  
159 typically account for the majority of the new connection costs. During 2006,  
160 Rocky Mountain Power connected about 28,000 new customers of which about

161 22,600 were in Utah. During 2007 (January thru October), we connected about  
162 18,900 new customers in Utah, which exceeds the trend in 2006.

163 **Q. Please explain the load growth impact on the T&D system when you connect**  
164 **this many customers annually?**

165 A. Each year the Company completes an analysis of its system performance to  
166 understand the impacts that load growth have had on the transmission and  
167 distribution system. For purpose of this testimony I will use the Wasatch Front in  
168 Utah as an example. An important feature of the Wasatch Front is the impact that  
169 temperature plays as a variable with the peak demand. Area planning forecast  
170 studies suggest that the impact of extreme temperatures for extended days can  
171 cause a 200 megawatt increase in peak demand along the Wasatch Front, Utah.  
172 Most recently, between the summer of 2005 and 2007, the Wasatch Front peak  
173 load increased 462 megawatts, or close to the size of the new Lake Side plant over  
174 a two year timeframe. Thus, this type of growth means system utilization of assets  
175 continues to increase, that is, substation transformers and distribution feeders  
176 loading is approaching nameplate rating and thermal rating. Therefore, continued  
177 investment in system reinforcement is necessary to accommodate the new  
178 connections and load growth.

179 **Q. Please explain how Rocky Mountain Power determines the amount and**  
180 **timing of T&D capital investment that is necessary to meet customer needs.**

181 A. The Company begins with customer service requests and load growth projections  
182 to carefully prepare budgets for T&D investments. Layered on top of these  
183 investment requests are reliability initiatives and asset replacement programs.



184 Initial project estimates are developed using estimating software tools to  
185 approximate project costs. Once a budget is developed and a need is formally  
186 recognized, the process to complete detailed planning, design engineering, and  
187 project scheduling to achieve the required in-service date is initiated. This process  
188 determines the final project amount and timing to make the investment. When a  
189 project moves to the construction phase, internal business controls are used to  
190 measure and monitor the progress to ensure projects are delivered within scope and  
191 budget. These activities are directed at providing quality and reliability at the  
192 lowest long-term cost, meeting industry service standards, and meeting the needs  
193 of our customers.

194 **Q. What are the primary challenges that Rocky Mountain Power faces with**  
195 **respect to T&D capital projects?**

196 A. The two primary issues facing the Company are: 1) global industrial construction  
197 and 2) commodity price increases. Rocky Mountain Power is one of the many  
198 electric utilities in the United States facing aging plant and customer growth.  
199 Global development is contributing to the demand for materials and supplies,  
200 which results in cost increases and delivery pressure for Rocky Mountain Power  
201 projects.

202 Examples of significant cost increases that have been experienced by the  
203 Company for all its major service components are abundant. In the mid-1990s a  
204 typical substation may have cost \$3 million, but today is about twice that amount.  
205 This increase is primarily due to the cost of metals, material and property. In the  
206 year 2000, steel, a major component of substations and transmission structures,

207 cost approximately \$425 per ton. In 2006 steel cost \$893 per ton, a 110 percent  
208 increase over 2000 levels. Between 2002 and 2007, the Company experienced a  
209 275 percent increase in the cost of commonly used 138-12.5 kV transformers, an  
210 83 percent increase in 230 kV capacitor bank costs, and a 79 percent increase in  
211 the cost of conductors.

212 **Q. What is Rocky Mountain Power doing to minimize the impact of rising costs**  
213 **during the current growth and construction cycle?**

214 A. The Company and the electric utility industry in general are in a construction boom  
215 cycle. Notwithstanding, the Company is actively managing the project lifecycle  
216 costs within the investment planning processes by ensuring availability of project  
217 material at competitive prices and selecting the appropriate delivery strategy for  
218 the construction phase. For instance, the Company uses a multi-year planning  
219 process that rigorously adheres to strict policies and procedures in the areas of  
220 project definition and/or project scope development, project detail design, creation  
221 of a suitable project schedule, and the use of project managers during the  
222 implementation phase. The procurement department competitively bids common  
223 material agreements with vendors that include aggressive terms and conditions  
224 designed to share risk through price controls. Procurement is also engaged in  
225 securing sourcing from international markets for transmission and distribution  
226 commodities, aggregating like material items from the ten-year business plans into  
227 larger market offerings to vendors to obtain discount pricing for volume orders,  
228 going to foreign markets for information technology developments when prudent  
229 to do so, combining like orders within the MidAmerican Energy Holdings

230 Company group of companies to achieve larger market offerings while strictly  
231 adhering to affiliate transaction commitments and requirements. A competitive bid  
232 procurement process is also used to identify construction firms that provide the  
233 best value in constructing each project and the Company continues to attract new  
234 construction resources (i.e. lineman and technicians) into our service territory,  
235 which improves the competition and pricing among construction businesses.  
236 Finally, the delivery strategy for each project is evaluated against both in-house  
237 resources and other engineering-procurement-construct (EPC) vendor agreements  
238 to ensure our efforts toward improving service quality and reliability bring the best  
239 value to our customers.

240 **Q. Does this conclude your direct testimony?**

241 A. Yes.