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IDAHO PUBLIC
UTILITIES COMMISSIO.

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE)
APPLICATION OF ROCKY) **CASE NO. PAC-E-07-05**
MOUNTAIN POWER FOR)
APPROVAL OF CHANGES TO ITS) **Direct Testimony of Douglas N. Bennion**
ELECTRIC SERVICE SCHEDULES)
)

ROCKY MOUNTAIN POWER

CASE NO. PAC-E-07-05

June 2007

1 **Q. Please state your name, business address, and position with the Company**
2 **(also referred to as Rocky Mountain Power).**

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 electrical
9 engineering in the state of Utah. In addition to formal education, I have attended
10 various educational, professional and electric industry seminars. I joined the
11 Company in 1978, and during those 29 years I have held various engineering
12 positions of increased responsibility providing extensive experience working
13 across the 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

1 in the general rate case, including adjustments for major known and measurable
2 investments through December 31, 2007. My testimony includes an explanation of
3 the Company's T&D capital investment plan and some challenges Rocky
4 Mountain Power faces with respect to its T&D projects. I also explain what the
5 Company is doing to minimize the impact of rising costs during a robust
6 construction period.

7 **Q. Please describe Rocky Mountain Power's T&D assets in Idaho.**

8 A. The Company owns and operates 94 substations in Idaho plus over 2,000 miles of
9 transmission lines and 5,600 miles of distribution lines. Over 85 percent of the
10 T&D lines are overhead conductors. The overhead transmission lines in Idaho are
11 supported by approximately 23,100 transmission poles, and the distribution lines
12 are supported by over 101,900 distribution poles. Originating from Idaho
13 substations are over 167 distribution feeders that serve approximately 67,000 Idaho
14 customers through 36,400 overhead distribution transformers and 8,100 pad-mount
15 distribution transformers.

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

18 A. As explained in Company witness Steven R. McDougal's testimony detailing the
19 revenue requirement calculation, the Company is adjusting the historical test year
20 to account for major plant additions with individual project cost estimates in
21 excess of \$2.0 million. As shown on Pages 8.8.2 and 8.8.4 of Exhibit No. 11 to
22 Mr. McDougal's testimony, the Company placed \$75 million of transmission-
23 related projects into service during 2006, and will place an additional \$163 million

1 of transmission-related projects and \$9 million of Idaho distribution-related
2 projects into service prior to December 31, 2007. A few of the more significant
3 projects include:

- 4 • \$54 million for interconnection and transmission of power from the Lake Side
5 generation project.
- 6 • \$24 million for transmission between Camp Williams and Mona for the
7 Currant Creek generation project.
- 8 • \$9 million for the Cinder Butte distribution substation near Idaho Falls, Idaho.

9 **Q. What benefits will customers derive from the three new capital investment**
10 **projects named above?**

11 A. Each of these projects is unique, but all have the common customer benefit of
12 improving service quality, reliability, and the delivery of power to meet customer
13 load requirements. For example, the Lake Side project consists of rebuilding
14 approximately 36 miles of 138 kilovolt single and double circuit transmission
15 lines, and modifying 6 to 8 substations, all of which are needed to interconnect and
16 integrate the 535 megawatts of power generated at Lake Side near Vineyard, Utah,
17 as a network resource for the Company. Reinforcing the 138 kilovolt transmission
18 system at this location provides additional south to north transfer capability that
19 will improve high voltage delivery capability, reliability and service quality.

20 The Camp Williams-Mona 345 kilovolt project consists of installing
21 approximately 42 miles of a new wire on the vacant side of existing double
22 structures, and the construction of six miles of new structures from the southern
23 boundary of the Camp Williams Utah Army National Guard facility to the Camp

1 Williams substation in Utah. This project is required to deliver the 525 megawatts
2 of power generated at Currant Creek near Mona, Utah.

3 The Cinder Butte substation is a new 161 kilovolt to 12.5 kilovolt
4 substation installed south of Idaho Falls. The substation consists of one 25 MVA
5 transformer. Because this is the first substation Rocky Mountain Power has
6 constructed that transforms power from 161 kilovolts to 12.5 kilovolts, a second 25
7 MVA transformer has been purchased to provide redundancy to the first
8 transformer in the event of failure. The project will provide additional capacity to
9 serve the rapidly growing load in the area.

10 **Q. Are all of the new T&D capital investment projects included in this filing**
11 **necessary to provide a reliable system in Idaho, even though many of the**
12 **projects are not located in Idaho?**

13 **A.** Yes, these expenditures are critical if the Company is to achieve its service quality
14 and reliability goals. The physical location of transmission facilities does not limit
15 the efficiency and reliability benefits that all customers realize through an
16 integrated, system-wide, high-voltage transmission system. Transmission facilities
17 46 kV and greater are considered integrated or networked across the Company's
18 six-state system. History has revealed that a transmission interruption under the
19 right location, timing and other circumstances can disrupt power delivery several
20 states away. It is therefore essential that the Company complete the transmission
21 projects included in this filing in order to provide adequate and reliable service to
22 our Idaho customers.

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

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

5 **Q. Please describe the transmission access portion of the capital investment plan.**

6 A. Rocky Mountain Power must invest in transmission assets to move Company-
7 owned generation to substations and load centers. The Company must also build
8 transmission facilities to move power generated by others (i.e. qualifying facilities)
9 to substations and load centers. In addition, the Company must build facilities that
10 interconnect with other transmission and generation providers as it enters into
11 contracts with customers, generators and shippers that require transmission access.
12 This transmission infrastructure is essential to enhance efficiencies as daily and
13 seasonal loads fluctuate.

14 **Q. Please describe the system reinforcement and replacement portion of the
15 capital investment plan.**

16 A. Idaho continues to grow in both customer numbers and capacity requirements.
17 Upgrading or replacing transformers and distribution feeders is required when
18 circuit loading exceeds 100 percent of design guidelines. Capital investment is
19 necessary to replace aging assets prior to failure and to upgrade the system in
20 specific areas in order to sustain or improve existing reliability levels. As with
21 many western utilities, a large portion of the Company's existing asset base was
22 installed in the 1950's, 60's, and 70's, and due to the normal aging processes, these
23 assets are nearing the point of replacement, which may be preceded by increased

1 failures and higher maintenance costs. Assets that are targeted for replacement
2 include obsolete oil-type circuit breakers, station transformers, electromechanical
3 station meters and relays, sub-transmission lines, distribution lines, poles and
4 cross-arms, switchgears, and underground cables. As Rocky Mountain Power's
5 system ages and demand increases, these factors place additional requirements on
6 the Company's system, and it is imperative that the Company keep pace with the
7 service requirements that customers expect.

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

9 A. T&D compliance investments are those required by state and federal regulations or
10 codes. Examples include environmental programs to mitigate bird and raptor
11 mortality, overhead relocations or overhead to underground conversions for road
12 construction and public works projects, Federal Communications Commission
13 wideband mobile radio conversion to narrow band operation by 2012, and Federal
14 Energy Regulatory Commission substation security initiatives.

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

16 A. Reliability is measured in the electric industry with metrics such as System
17 Average Interruption Duration Index (SAIDI) and System Average Interruption
18 Frequency Index (SAIFI). Rocky Mountain Power has committed to no more than
19 167.4 minutes of average customer interruption (SAIDI) and no more than 2.07
20 average interruptions per year (SAIFI), and the Company has committed to further
21 improve reliability through 2011. To meet these reliability objectives and to ensure
22 reliability to customers the Company must continue its T&D asset replacement and
23 reinforcement capital investment program, improve under-performing circuits, and

1 replace aging and deteriorated assets through a planned asset replacement program.

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

3 A. New customer connections include residential, commercial, industrial, irrigation,
4 other utilities, and street lighting, but residential and commercial customers
5 typically account for the majority of the new connection costs. During 2006, the
6 Company installed 2,335 new connections in Idaho, and 29,009 new connections
7 throughout our Rocky Mountain Power service territory.

8 **Q. Please explain how Rocky Mountain Power determines the amount and
9 timing of T&D capital investment to meet customer needs.**

10 A. The Company begins with customer service requests and load growth projections
11 to carefully prepare budgets for T&D investments. Layered on top of these
12 investment requests are reliability initiatives and asset replacement programs.
13 Initial project estimates are developed using estimating software tools to
14 approximate project costs. Once a budget is developed and a need is formally
15 recognized, the process to complete detailed planning, design engineering, and
16 project scheduling to achieve the required in-service date is initiated. This process
17 firms the project amount and timing to make the investment. When a project
18 moves to the construction phase, internal business controls are used to measure and
19 monitor the progress to ensure projects are delivered within scope and budget.
20 These activities are directed at providing quality at the lowest long-term cost,
21 meeting industry service standards, and meeting the needs of our customers.

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

3 A. The two primary issues facing the Company are: 1) global industrial construction
4 and 2) commodity price increases. Rocky Mountain Power is not the only electric
5 utility in the United States facing aging plant and customer growth. Global
6 development is contributing to the demand for materials and supplies, which
7 results in cost increases and delivery pressure for Rocky Mountain Power projects.

8 Examples of significant cost increases that have been experienced by the
9 Company for all its major service components are abundant. In the mid-1990s a
10 typical substation may have cost \$3 million, but today is about twice that amount.
11 This increase is primarily due to the cost of metals, material and property. In the
12 year 2000, steel, a major component of substations and transmission structures,
13 cost approximately \$425 per ton. In 2006 steel cost \$893 per ton, a 110 percent
14 increase over 2000 levels. Between 2002 and 2007, the Company experienced a
15 275 percent increase in the cost of commonly used 138-12.5 kV transformers, an
16 83 percent increase in 230 kV capacitor bank costs, and a 79 percent increase in
17 the cost of conductors.

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

20 A. The Company and the electric utility industry in general are in a construction boom
21 cycle. Notwithstanding, the Company is actively managing the project lifecycle
22 costs within the investment planning processes by ensuring availability of project
23 material at competitive prices and selecting the appropriate delivery strategy for

1 the construction phase. For instance, the Company uses a multi-year planning
2 process that rigorously adheres to strict policies and procedures in the areas of
3 project definition and/or project scope development, project detail design, creation
4 of a suitable project schedule, and the use of project managers during the
5 implementation phase. The procurement department competitively bids common
6 material agreements that include aggressive terms and conditions with vendors that
7 are designed to share risk through price controls. A competitive bid procurement
8 process is also used to identify construction firms that provide the best value in
9 constructing each project and the Company continues to attract new construction
10 (i.e. lineman and technicians) resources into our service territory, which improves
11 the competition and pricing among construction businesses. Finally, the delivery
12 strategy for each project is evaluated against both in-house resources and other
13 engineering-procurement-construct (EPC) vendor agreements to ensure our efforts
14 toward improving service quality and reliability bring the best value to our
15 customers.

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

17 **A. Yes.**