Rocky Mountain Power
Docket No. 10-035-124
Witness: Douglas N. Bennion

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF UTAH

ROCKY MOUNTAIN POWER

Direct Testimony of Douglas N. Bennion

Transmission and Distribution Capital Expenditures

January 2011

Q. Please state your name, business address, and present position with PacifiCorp dba Rocky Mountain Power (the "Company").

A. My name is Douglas N. Bennion. My business address is 1407 West North Temple, Suite 270, Salt Lake City, Utah 84116. I am the Vice President of Engineering Services and Capital Investment in the Company's Rocky Mountain Power Division.

Qualifications

Q. Please briefly describe your education and business experience.

A. I received a Bachelor of Science Degree in Electrical Engineering from the University of Utah and I am a registered professional engineer in the state of Utah. In addition to formal education, I have attended various educational, professional and electric industry seminars. I joined the Company in 1978, and during those 33 years I have held various engineering positions of increased responsibility providing extensive experience working across PacifiCorp's service territory prior to assuming my current position. Additionally, I have provided expert testimony on various matters before the Public Service Commission of Utah, the Idaho Public Utilities Commission, and the Wyoming Public Service Commission.

Q. Please describe your present duties.

A. I am responsible for Rocky Mountain Power's transmission and distribution ("T&D") capital investment planning, which assists the Company in providing safe, economic, and reliable energy delivery to our customers. This includes prioritizing investments to manage risk, and planning future T&D investments to meet customer energy needs while maintaining system reliability standards.

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

A. The purpose of my testimony is to explain and support the T&D capital expenditures included in the Company's case, with the exception of the main grid transmission projects, which will be addressed by Mr. Darrell T. Gerrard. Specifically, my testimony includes an explanation of the Company's local T&D capital investment plan and plant additions.

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

A. The Company owns and operates over 370 substations in Utah plus over 6,600 miles of transmission lines and 21,100 miles of distribution lines. About 65 percent of the T&D lines are overhead conductors. The overhead transmission lines in Utah are supported by approximately 88,700 transmission poles or structures, and the distribution lines are supported by over 362,600 distribution poles. Over 1,000 distribution feeder lines originate from Utah substations that serve approximately 792,600 Utah customers with about 109,300 overhead distribution transformers and 77,000 distribution pad-mounted transformers.

Q. Please describe the major T&D investments that the Company is adding to rate base in this case.

A. Between June 30, 2010, (the end of the base period in this case), and June 30, 2012 (the end of the test period in this case), the Company will place into service approximately $236.4 million of local transmission investment, not including main grid transmission investment, and approximately $240.5 million of Utah distribution investment.

Some significant projects in the rate case include the following:

- **Cameron to Milford: New 138 kV Transmission and 138-46 kV Transformer 75 MVA ($15.2m)** - This project will construct a new 138 kV source to the Milford area by installing a new 138 kV line from the Cameron substation to the Milford substation with a projected in service date of May 2012. The project includes the installation of a 138-46 kV transformer at the Milford substation required to serve the load in the Milford area. The Milford area's 46 kV system is radial and heavily dependent on generation from the Blundell plant to maintain 0.9 p.u. voltage when the area load exceeds 21.1 MW.
- **City Creek Center: New 40 MW Development for PRI Phase II ($12.3m)** - Property Reserve Inc. (PRI) is developing the City Creek Center, which is a development in downtown Salt Lake City, Utah, that encompasses two and one half city blocks. The developed area also includes several building facilities that will remain unchanged but is required to be fed from the new power upgrades installed for the City Creek Center. This project is projected to be completed in May 2012.
- **Nibley: New 138-12.5 kV Substation and Rebuild seven Miles Transmission ($11m)** - The electrical load in the south end of Cache County is supplied by four distribution substations owned by Rocky Mountain Power (Logan Canyon, Millville, Nibley and East Hyrum) and one municipal system (Hyrum City). This area includes about 6,000 Rocky Mountain Power customers plus the Hyrum City customers. The area's substations are fed by two parallel constructed 46 kV lines – the

Green Canyon-East Hyrum east and west lines. The load in the area has increased to the point where the loss of one of these 46 kV lines will cause an outage to customers since the remaining line does not have the capacity to support the entire load. The 46 kV system is fed by two 138-46 kV transformers (33.3 MVA each) at the Green Canyon substation. A loss of one transformer will overload the remaining transformer. This project will build a new 138-12.5 kV, 40 MVA substation with three 12.5 kV feeders, rebuild a seven mile section of 46 kV line to 138 kV and add two 138 kV circuit breakers at the Green Canyon substation that is required to address these operating and loading issues. This project is projected to be completed in May 2011.

The capital investments mentioned above, as well as all of the other T&D capital projects that are included in this case, are detailed in Company witness Mr. Steven R. McDougal's Exhibit RMP ___(SRM-3).

Q. What benefits will Utah customers derive from the T&D capital projects included in this case?

A. The Company's capital investments in T&D have the common customer benefit of preserving or improving service quality, reliability, and the delivery of power to meet customer load requirements. Local transmission facilities are considered part of the Company's integrated network and provide benefits to Utah customers as well as benefits to all customers in the Company's six-state retail service territory. It is, therefore, important that the Company complete the transmission projects included in this filing as required to provide adequate and reliable service

to all of our customers. Additionally, distribution capital investments result in a direct benefit to our Utah customers, whether it is to connect new customers, reinforce, repair or upgrade the existing system, or meet mandated compliance requirements.

System Reinforcement and Replacement

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

A. System reinforcement is investment made by the Company on behalf of customers required to serve load growth; this case includes approximately $72.9 million of system reinforcement at distribution level voltage in Utah and approximately $92.3 million of system reinforcement investment on the Company's local transmission system. Upgrading or replacing transformers and distribution feeders is required when thermal loading is projected to exceed 100 percent of thermal rating or when voltages are projected to fall outside of the American National Standards Institute (ANSI) planning criteria. When new customers connect, or when existing customers increase electric load, there is a possibility that customer load additions/connections will cause thermal overloads or voltage levels to be outside of ANSI range. Additional electrical infrastructure is required to address these issues.

Although Utah's load growth has slowed down from its peak in 2007 due to economic conditions, system reinforcement projects remain necessary. In Utah, about 8,600 new residential and 3,800 new commercial customers have been added to Rocky Mountain Power's electrical system in 2009, and 2010 is showing similar

results. Irrespective of the slower growth rates from our peak in 2007, growth is still occurring across our system.

Another category of capital investment essential to maintaining reliable service is replacing aging assets prior to failure and upgrading the system in specific areas in order to sustain or improve existing reliability levels. Due to normal aging processes, some assets are nearing the point of replacement, which may be preceded by increased failures and higher maintenance costs. Examples of assets targeted for replacement include substation equipment, transmission lines, distribution lines, poles and cross-arms, switchgear, and underground cable. As Rocky Mountain Power's system ages and demand increases, additional stress is placed on the Company's assets. This case includes approximately $115.3 million of investment for the replacement of assets that are either allocated or directly assigned to Utah.

System Compliance ($102.1 million)

Q. Please describe the compliance portion of the capital investment plan.

A. T&D compliance investments are those required by city, state or federal regulations. Customers may also request and fund projects in the compliance portion of the capital investment plan. Examples include the following:

- Environmental programs to mitigate bird and raptor mortality;
- Overhead relocations or overhead to underground conversions for road construction, public works projects, or customer requests;
- Federal Communications Commission wideband mobile radio conversion to narrow band operation by 2012; and

- Federal Energy Regulatory Commission substation security initiatives and reliability initiatives.

New Connects ($111.2 million)

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

A. New customer connections include residential, commercial, industrial, irrigation, other utilities, and street lighting. Residential and commercial customers typically account for the majority of the new connection costs. The residential market (new housing starts) has dropped off from historic highs due to the recession. The commercial and industrial sectors have also dropped off from historic highs. Even though new connections have slowed, a single commercial or industrial customer's load can put pressure on the transmission and distribution infrastructure of the Company. A challenge for the Company in making large commercial and industrial new connections is the sheer magnitude of the projects. For example, depending on the size of the new load and its proximity to existing transmission system facilities, adding just one substantial new commercial or industrial customer may exceed the operating limitations of the Company's local area transmission and distribution system or substation capacity. Significant planning, engineering and construction of transmission lines, substations, switching stations and other facilities are still necessary.

The recent economic recession has reduced the number of new customer connections in Utah over the past couple of years; however, Utah's customer base is still growing. During 2009, Rocky Mountain Power connected over 12,000 new customers in Utah with 2010 showing similar numbers at the time of this writing.

Q. Please explain how load growth on the T&D system has been modified by the reduction in new connects.

A. Each year the Company completes an analysis of its system performance to understand the impacts load growth has had on the transmission and distribution system. Substation transformer and distribution feeder loading continues to increase; thus, thermal capacities are being approached. Required investment in system reinforcement is still necessary to accommodate load growth caused by new and existing customers to mitigate thermal loading and maintain service voltage standards.

Q. Please explain how Rocky Mountain Power determines the amount and timing of T&D capital investments.

A. The Company begins with mandated/compliance requirements, customer service requests, system reinforcement projects based on load growth projections, asset replacements and functional upgrades to prepare budgets for T&D investments. Through the planning process, a preliminary project scope is identified and initial project estimates are created to approximate project costs. Once the project budget is approved, the Company initiates a process to complete detail planning, detail design engineering, and detail project scheduling, resulting in a more refined cost estimate and in-service date. When a project moves to the delivery (construction) phase, the Company uses internal business controls to measure and monitor the progress to ensure projects are delivered within the approved scope and budget. The Company uses these activities to provide quality at the lowest long-term cost required to meet the needs of our customers.

Reliability

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

A. The Company's reliability investment program is designed to reduce the number and impact of power interruptions to its customers.

In recent years the Company has taken advantage of improved outage data and reliability tools to create targeted reliability programs. Since 2002, the Company improved its ability to collect and manage customer outage data with the Outage Management System. As a result, Rocky Mountain Power has changed processes to allow the Company to better target investments towards portions of the distribution system where reliability performance levels could be improved. For example, in 2010 the Company introduced area improvement teams. Area improvement teams develop strategies to improve reliability performance in targeted areas experiencing an increase in outages when compared to prior years. These teams consist of management, field engineering, field operations and reliability engineering personnel. These teams develop reliability plans by incorporating the people that are actually performing the corrective work and leveraging their local knowledge. The past three years of experience with the Company reliability programs have shown that the Company should continue to:

- Focus on reducing the impact of interruptions that can be controlled with preventative programs, such as replacing failure prone equipment (as identified from documented historical performance) and completing vegetation management programs.
- Promptly and safely restore uncontrollable service interruptions, such as

vehicles hitting power poles and customers or contractors damaging underground cables via dig-ins.

This approach allows the Company to be more efficient as it continuously seeks to improve electric service reliability for all customers.

Q. Please summarize your testimony.

A. The T&D capital expenditures included in this case are essential and required in meeting Rocky Mountain Power customers' needs and maintaining or improving system reliability standards. In particular, the proposed T&D capital expenditures are required in order to:

- Serve new customers (industrial, commercial, and residential) that require reinforcement and/or extensions of the Company's existing infrastructure.
- Serve existing customers through system reinforcement (expansion or increase in capacity) of existing infrastructure.
- Maintain acceptable reliability and service.
- Comply with orders issued by regulatory, state or local governmental entities.

The Company's transmission and generation projects are part of an integrated, system-wide, high voltage system that provides the foundation to move resources throughout the western United States, thus providing service and reliability benefits to Utah customers. Additionally, these investments contribute to meeting the performance standards program that the Company has committed to through 2011.

Q. Are the T&D capital investments included in this case in the public interest and do you recommend that the Commission include them in the Company's rate base?

A. Yes. The T&D capital investments included in this case are in the public interest for the reasons that I mentioned earlier in my testimony, including serving the public with safe, adequate and reliable service. For these reasons, I recommend that the Commission approve these investments for inclusion in the Company's rate base.

Q. Does this complete your direct testimony?

A. Yes.