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Date: October 17, 2011

Subject: Docket No. 08-999-05 – Smart Grid Monitoring Report

### Background

On December 17, 2009 the Utah Public Service Commission (Commission) issued its Order in Docket No. 08-999-05 regarding Determination Concerning the PURPA Smart Grid Investment and Smart Grid Information Standards. The Commission determined it was not appropriate to adopt the PURPA Smart Grid Investment Standard but did adopt the Smart Grid Information Standard. Although the Commission did not adopt the Investment Standard it found merit in monitoring the development of smart grid technologies and directed Rocky Mountain Power (Company), the Division of Public Utilities (Division) and other interested parties to meet and collaboratively determine the content of a smart grid monitoring report (Report) to ensure it provides useful information.

On August 17, 2011 Rocky Mountain Power filed with the Commission its first Smart Grid Monitoring Report in accordance with the Commission's December 17, 2009 Order. On August 31, 2011 the Commission issued an Action Request to the Division with the assignment to "Please review these documents, and the proposed reporting schedule, to ensure they satisfy the objectives discussed in the Commission's December 17, 2009, Determination Concerning the PURPA Smart Grid Investment and Smart Grid Information Standards in this docket, and the discussions in the March 30, 2010, technical conference

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pertaining to smart grid monitoring reporting<sup>1</sup>". The Division's response is due October 17, 2011.

Following are the comments and recommendations of the Office of Consumer Services (Office) regarding the Smart Grid Monitoring Report.

### Discussion

One of the difficulties facing utilities and regulators is that there currently is no official or consistent definition of Smart Grid and the term is used for both sweeping change and more modest advances. Also there are no interoperability standards. The Energy Independence and Security Act of 2007 specified that the Department of Energy (DOE) work on interoperability standards to mitigate the risk of premature obsolescence of equipment and software. The National Institute of Standards and Technology is developing those standards which are to be ratified in 2012. While standards are being developed, technology improved and pilot programs implemented it is important that Rocky Mountain Power and Utah regulators stay abreast of new developments in order to make appropriate decisions regarding potential Smart Grid implementation. The Office does not view the Report as just an exercise for the Company and in this memo offers a few recommendations that we assert will enhance its value

#### 1. Report Contents

The Report begins with a helpful introduction to Smart Grid. The Company provides descriptions of various elements of smart grid technology as well as diagrams to demonstrate the interaction and complexity of the technologies. The Report makes clear that implementing smart grid in totality is a multi-step, substantial cost undertaking that in the future may or may not be cost effective. However, at present the uncertainties with technology, cost and customer acceptance do not instill confidence regarding moving forward with implementation.

In its Report the Company focused on what it describes as smart grid technologies that can be readily integrated with the existing infrastructure – "technologies that do not require major electrical system changes." The Company's internal study included advanced metering systems with demand response programs, distribution management systems and transmission synchrophasors.

The Company included a cost benefit analysis for components that they describe as having identifiable costs and quantifiable benefits to provide a rough estimate of the potential of investing in those technologies. While we understand the difficulty of performing a cost benefit analysis for a more fully implemented smart grid with the limitations currently in place, not the least of which is an agreed upon definition of smart grid, it is the Office's view that this type of cost benefit analysis is an important element of

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<sup>1</sup> The Company states that in late 2010, a copy of the Washington smart grid report was provided to the Division and in early 2011 the Division indicated to the Company that the report satisfied its intent for the format and content of a Utah smart grid report.

a useful report. We acknowledge the Company's efforts and anticipate that the components and costs included in the cost benefit analysis will improve as more knowledge and experience with the technologies and understanding of customers' acceptance is achieved.<sup>2</sup>

The Report as presented provides useful information that the Office assumes will be expanded upon and supplemented as more experience and information becomes available. Each Report should build on the prior years' Report.

## 2. Recommendations for inclusion in future Reports

On page 33 of the Report the Company states that managing its distribution system has required the installation of capacitor banks and voltage regulators and that costs to migrate to smart grid are mitigated by the choice of equipment that will not have to be replaced but will require only an upgraded control panel for two-way communication. In a meeting with the Division and Office on October 4, 2011 the Company described the cost associated with the upgrade compared to potential replacement costs for moving to smart grid. This type of information is very relevant to the smart grid discussion and should continue to be included in future reports. Inclusion of a description of the cost benefit results from the Company's analysis would also be useful information.

Additionally, in the October 11, 2011 Demand Side Management Advisory Group Meeting Carol Hunter mentioned technology that the Company is looking at that could also be useful in less than full smart grid type technology. Although details were not provided the reference was to providing customer information utilizing the Company's current AMR vs. AMI with two way communications. All technologies of this type that the Company is contemplating or installing should be included in the Smart Grid Monitoring Report.

The Report identifies a number of specific necessary technologies for a form of smart grid and touches on various issues and concerns with implementation. Several utilities across the country have embarked on a variety of smart grid pilot projects. The Office considers these pilot projects as sources of valuable information for potential future smart grid implementation in Utah. In view of the increase in smart grid activities and pilot projects, the Company has created an internal smart grid department. One of the duties of this department is the monitoring and assessment of smart grid pilot projects throughout the United States. Future Reports should include a list of those projects and a brief description. This could be provided in an appendix to the Report and updated in each annual Report. As more smart grid pilots are implemented the Company could propose limiting the list to projects it is following closely or the ones of special interest for various aspects of design or success. Determining which technologies, programs and implementation processes work and are cost effective and which are not will be important information if smart grid is to be implemented in Utah in the future.

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<sup>2</sup> At page 13 of the Order the Commission stated: "We concur with UIEC that, as a matter of prudence, the Company should be making an informed analysis whenever any new equipment investment is made based upon the six factors listed in Subparagraph 16(a) and other factors as appropriate.

A section should also be added to the Report to provide information regarding smart grid activities in PacifiCorp's other jurisdictions. The Office has been told that Washington requires a biennial report, similar to the Utah Report and that Wyoming requires an annual report. The Company also reported that the Oregon Commission is requiring its staff to look at elements of smart grid that could perhaps be installed short of full implementation.<sup>3</sup> While the mere requirement for a report is not consequential, it is important that Utah is kept apprised of commission and legislative actions and requirements taking place in other PacifiCorp jurisdictions. The Office asserts that the Commission should require inclusion of jurisdictional actions in the Report because requirements imposed by other jurisdictions can have an impact on Utah customers. Since the Report would not be filed more frequently than annually, the Company should also provide separate notice of imminent actions in other jurisdictions.

The Company has indicated that because it is required to file a smart grid report annually in Wyoming it would not be burdensome to provide annual reports in Utah as well. The Office supports annual filing of the Smart Grid Monitoring Report.

### Recommendations

The Office recommends that future Smart Grid Monitoring Reports include the following information:

- 1) A section describing any upgrades or changes the Company is making relative to potential Smart Grid implementation.
- 2) A list and description of Smart Grid Pilot Projects across the country that the Company is monitoring.
- 3) A description of Smart Grid activities in the Company's other jurisdictions.

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<sup>3</sup> The Office does not have the details of this investigation but it was mentioned by Rocky Mountain Power in the October 4, 2011 meeting.