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DEPARTMENT OF COMMERCE
Office of Consumer Services

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The Division of Public Utilities
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Date: September 4, 2012

Subject: Docket No. 12-035-88 (08-999-05) – Smart Grid Monitoring Report

Background

On July 6, 2012, Rocky Mountain Power (Company) filed its 2012 Smart Grid Monitoring Report as ordered by the Utah Public Service Commission (Commission) on November 30, 2011, in Docket No. 08-999-05. On July 31, 2012, the Company filed a Corrected Smart Grid Monitoring Report” (2012 Report) to make corrections that had been discovered after the July 6 filing. On August 1, 2012, the Commission issued an Action Request to the Division of Public Utilities for the Corrected Smart Grid Monitoring Report with a response due date of September 4, 2012.

Following are the comments and recommendations of the Office of Consumer Services (Office) regarding the 2012 Corrected Smart Grid Monitoring Report.

Discussion

As we noted in our comments regarding the Company’s 2011 Smart Grid Monitoring Report, one of the difficulties facing utilities and regulators is that there currently is no official or consistent definition of Smart Grid. The Smart Grid term reflects both sweeping change and more modest advances. The Company’s 2012 Report includes definitions and characteristics of Smart Grid from The Electric Power Research Institute (EPRI) and the Modern Grid Initiative, respectively.

2012 Report Overview

In the 2012 Report, the Company describes the characteristics of a smart grid. The Report focuses on technologies that the Company believes can be easily integrated into its existing infrastructure. Several technologies are identified that were not considered for the study including distributed energy systems (including electric vehicles) and direct load control programs.

The Report also includes the Company's financial analysis of smart grid technologies. Based on this analysis, the Company has determined that implementing a comprehensive smart grid system comes at a substantial cost. Due to the uncertainties with technology, costs and customer acceptance, implementing smart grid at this juncture would not be cost effective and could result in premature obsolescence of installed equipment and technologies.

Commission Requirements for Annual Reports

In its November 30, 2011, Order the Commission required enhancements and improvements in future Smart Grid Reports. While the 2012 Report is informative, it does not fully comply with the requirements set forth in the Commission's order in the following areas.

- 1) A discussion (including project/activity description, cost, status, results and pertinent cost/benefit information) of all smart-grid related projects and activities the Company is actually engaged in throughout its system (e.g., tests of transmission synchrophasors, energy storage projects, voltage support projects).

Office Response:

The 2012 Report identifies several smart-grid related projects that the Company is currently evaluating on a pilot basis. However, only one project includes costs and none include cost/benefit information. The following are examples of projects that lack cost/benefit or other required information:

- Conservation Voltage Reduction (CVR) pilot project in Washington. A description of the CVR pilot project is provided along with initial assumed savings. The Company states that its existing voltage management and system improvement practices are better than assumed in some regional and national estimates. The pilot is expected to provide additional information to determine where CVR can be utilized cost effectively. Costs of the pilot project are not included.
- In collaboration with EMB Energy Inc., the Company is working towards testing and integration of a flywheel energy storage technology for electric power systems. The Company states that a flywheel technology will become a valuable tool in managing intermittent resources once an energy storage plant is demonstrated

to be cost effective. The 2012 Report does not provide the status of the project nor the current costs associated with the project.

- Transmission Synchrophasor Demonstration Project (TSP). In conjunction with the Western Electricity Coordinating Council (WECC) PacifiCorp has committed \$800,000 of funding to engage in planning, design, engineering and operation activities to identify and deploy synchrophasor technology at locations on PacifiCorp's system. In this instance PacifiCorp identifies the cost, the current status of the project and the scheduled completion date. Cost/benefit information is not included
- Dynamic Line Ratings (DLR) Projects. The Company describes two DLR equipment installations including the location and timetable for each. The Company indicates that it must obtain WECC approval to commercially operate the line using dynamic ratings. There is no indication of the cost of these projects or what will happen if WECC does not give its approval for commercial operation.
- Smart Grid Solar Energy Study. This study has been completed and provides information about which buildings provide the greatest potential for solar PV panel installation. The study further demonstrated that the time of maximum solar output does not coincide with the daily distribution system peak for this particular circuit. No associated costs or cost/benefit information is provided. Although this Study has been discussed in other venues no costs were included in the 2012 Report.

- 2) A description of smart grid-related activities and requirements in the Company's other jurisdictions.

Office Response:

The only required jurisdictional smart grid related activity included in the 2012 Report is the CVR pilot project in Washington, as described under 1) above. The Office understands that Wyoming requires the Company to submit a smart grid report annually. Future reports should contain a list by state of any requirements and activities.

- 3) A discussion of vehicle to grid applications in the Plug-In Electric Vehicle section of the Report.

Office Response:

The 2012 Report contains a brief discussion about electric vehicles. At this time PacifiCorp expects plug-in electric vehicles to represent incremental load on the system rather than providing distributed energy benefits. The Company states that these issues are being handled by a separate group within PacifiCorp. The Office recommends that a short update on electric vehicles be included in or attached to future reports.

The Commission's order contained two additional instructions.

- 1) The Company was directed to explain the relationship between the analysis provided in the Financial Summary and the demand side resource performance standards approved by the Commission in Docket No. 09-035-27.

Office Response:

The Company provided an economic analysis that demonstrates the Smart Grid elements it selected are not currently cost effective. Demand side management programs are mentioned in the Demand Response section of the 2012 Report. However, there is no explanation of the relationship between the analysis provided in the Financial Summary and DSM performance standards.

- 2) Finally, the order stated that all future smart grid annual reports should be included as a discussion item at the next DSM advisory group meeting following submittal of the report.

Office Response:

As stated above the Corrected 2012 Report was filed with the Commission on July 31, 2012. There has not been a meeting of the DSM Advisory Group subsequent to the filing. The Office anticipates that the next DSM Advisory Group meeting will include a discussion of the 2012 Report.

Additional Concerns

The Commission's order required "An explanation of the interaction of smart grid, possible rate structures, and consumer behavior."

Rate Design

In the discussion of demand response the Company identifies price responsive programs such as time-of-use (TOU) and critical peak pricing (CPP). The Company's analysis includes mandatory TOU with a CPP component in order to maximize benefits. While the Office recognizes that the Company is not making a specific proposal at this time, care should be taken that mandatory participation does not become a foregone conclusion without additional analysis at the time an actual demand response proposal is before the Commission.

Customer Behavior

The Company indicates that it is uncertain whether customer behavioral changes associated with smart grid will be sustained. The Office believes this is a valid concern. Information on this important issue should be acquired through the Company's monitoring of other smart grid programs.

Further, the Company reports that inquiries regarding providing a smart grid or participating with a local city or municipality on a smart grid pilot project continue to increase. More detail regarding these inquiries may help inform the degree to which customer education would be required and potential participation in a future smart grid project.

Recommendations for Future Reports

The 2012 Report is constructed as the Company's potential business case describing various elements of smart grid that it believes may prove beneficial and cost effective in the future. Projects the Company is currently involved with are intermingled with the business plan elements. For ease of determining if future reports meet Commission requirements it would be helpful for the Company to include a list of the requirements and the pages within the report where the required information can be located.

As noted above inclusion of a brief report by the group working on electric vehicles and a list by state of smart grid requirements or projects should also be included in future reports.

Conclusion:

The Company recommends that it continue to monitor smart grid activities. The Office concurs with that recommendation. We further recommend that the Company continue to implement cost effective smart grid elements or those that can be easily and cost effectively converted to smart grid when a replacement or upgrade of current equipment is necessary.

Recommendations

The Office recommends that the Commission require future smart grid reports to include:

- 1) an index or other means of identifying the location within the report of compliance with Commission ordered requirements;
- 2) an update on electric vehicles;
- 3) a list by state of smart grid requirements or projects; and
- 4) future reports should fully comply with Commission orders or provide an explanation in each area where they do not comply.