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ACTION REQUEST RESPONSE

To: Public Service Commission

From: Division of Public Utilities
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Thomas Brill, Technical Consultant
Charles Peterson, Technical Consultant
Sam Liu, Utility Analyst

Date: October 13, 2011

Ref: Docket No. 08-999-05. Rocky Mountain Power's "Report on Smart Grid Technologies."

RECOMMENDATIONS (Acknowledge with changes for future reports)

The Division of Public Utilities (Division) recommends that the Commission acknowledge Rocky Mountain Power's (Company) Report on Smart Grid Technologies (Report), which was filed with the Commission on or about August 17, 2011. The Division recommends that the Commission order changes to the timing and content of the Report to correspond closely with the timing and content of the similar Report the Company files in Wyoming. The Division further recommends that the Company include in future reports a discussion of the smart grid activities and result of those activities that the Company is actually engaged in. For example, the Company is currently involved in tests of transmission synchrophasors technologies and the installation of partial smart grid components, such as the communications-ready substation capacitor banks.

However, while there is mention of the transmission synchrophasors test, there is no mention of other activities in the Report. Generally, the Company should include in future reports a discussion of any smart grid-like activities that accrue some of the benefits of a smart grid system.

DISCUSSION

The Company filed its Report on Smart Grid Technologies on August 17, 2011 pursuant to the Commission Order in Docket No. 08-999-05 that was issued on December 17, 2009. The Commission directed “the Company, the Division, and other interested parties to...collaboratively determine the content of the report in order to ensure the report provides the information that is useful in accomplishing the objectives discussed above.”¹ The objectives are not clearly enumerated in the Commission Order; however they appear to include the following:

- The Company will monitor the development of smart grid technologies.
- The Company will consider implementing smart grid technologies as these technologies mature and it is able to demonstrate their cost effectiveness.

The Division has reviewed the Report. The Division also held a meeting on October 4, 2011 with Douglas Marx, who is the director of the Company’s smart grid program and Dave Taylor, the Company’s Utah regulatory manager. Cheryl Murray, of the Office of Consumer Services also attended the meeting. The meeting was useful in clarifying some aspects of the Report and discussing smart grid-related activities that the Company is actually pursuing that are not described in the Report.

The Report focuses on technologies the Company chose as being most amenable to implementation in its current system. These technologies included advanced metering systems

¹ Commission Order, Docket No. 08-999-05, December 17, 2009, page 14.

with demand response programs, distribution management systems, and transmission synchrophasors. The Company elected not to study in depth auto-healing distribution systems, distributed energy systems (including electric vehicles), and direct load control programs.² Of the technologies included, the Report gives detailed discussions of the various available technologies.

The Company makes it clear that in its view the backbone of a smart grid is a sophisticated and expensive communications system. The purpose of the communications system is for the Company to substantially increase its electronic contact with small pieces of its system and to communicate with customer smart appliances. The Company does believe that some communication with customers could be done through existing systems such as the internet, but the Company would have to develop systems and programs at its end as well. Because of the up-front cost of the communications systems, the Company concludes that no smart program that was studied is currently cost effective. Some programs including demand response and outage management programs would likely be cost effective excluding the communications systems. Distribution management and advanced metering systems do not appear to be cost effective in any case at this time.³ Benefits for transmission synchrophasors have not yet been determined and are discussed further in the Activities section below.

The Company's conclusion is that smart grid technologies are not yet sufficiently mature or cost effective. The Company does not plan to install smart grid technologies for at least ten years (however, see below).

ACTIVITIES THE COMPANY IS CURRENTLY PURSUING

The Company is involved in a test project of transmission synchrophasors in conjunction with the Western Electricity Coordinating Council (WECC) and other partners. Transmission

² Report, page 1, third paragraph.

³ Report, Confidential Attachment.

synchrophasors are a system of sensors that detects faults in the transmission system on a real time basis, and tracks the direction and spread of the fault. The goal of this system of sensors is the near-instantaneous detection of a transmission fault allowing quick action to isolate and to re-route power around the fault to minimize transmission-related outages. In the next two or three years the Company expects to have the information necessary to evaluate the cost effectiveness of such a system. There is some expectation that over the next two or three years a transmission synchrophasors system will be shown to be cost effective. Since the synchrophasors system is independent of other smart grid technologies, such a system could begin to be installed by the Company within a few years.

At the meeting with the Company the Division asked whether there could be partial construction and phase-ins of some smart grid technologies that were not brought out in the Report. The Company responded in part with a discussion of the transmission synchrophasors, mentioned above as independent of other technologies. Additionally it became apparent during the discussion that the Company is considering and implementing other partial solutions. For example Mr. Marx told the Division that whenever the Company is replacing substation capacitor banks, it is now spending a little extra amount now to make the capacitor banks communications ready in anticipation of future implementation of smart grid technologies. The reasoning is that it would cost much more to tear out and replace capacitor banks in the future in order to make them communications ready when appropriate smart grid solutions are eventually implemented.

Mr. Marx also discussed the Company's effort to explore less-than-smart-grid technologies that achieve "70 percent" of the benefits of a full smart grid solution, but at a fraction of the cost. An example is the automated meter system already implemented along the Wasatch Front that allows the rapid remote reading of customers' meters.

The Division recommended to the Company that future reports include a section that discuss the Company's current smart grid-related activities in some detail, and any plans for partial implementation of smart grid-like technologies.

RECOMMENDATIONS

The Company filed its smart grid monitoring report pursuant to the Commission's Order in Docket No. 08-999-05. The Division recommends that the Commission acknowledge the Report. The Company requested that future reports be filled along with the smart grid reports that are to be filled each year with the Wyoming Commission each September. After discussion with the Company at the October 4th meeting, the Division agrees that such a change in timing would help the Company economize its reporting responsibility, with likely no reduction in information to Utah regulators and interested parties. The Division further recommends that the Company include in future reports a discussion and any results of the smart grid activities that the Company is actually engaged in; for example the tests of transmission synchrophasors technologies, and the installation of smart grid components, such as the communications-ready substation capacitor banks. The Company should report on any smart grid-like activities that accrue some of the benefits of a smart grid system.

The Division therefore recommends that the Commission in its acknowledgment Order, order the Company to adjust the timing and content of its report to correspond with its filing in Wyoming, with the exception that the Company include a section in its annual report on the smart grid-related activities it is actually involved in as described above.

cc:

Dave Taylor, Rocky Mountain Power

Michele Beck, Office of Consumer Services