



State of Utah
Department of Commerce
Division of Public Utilities

FRANCINE GIANI
Executive Director

CHRIS PARKER
Director, Division of Public Utilities

GARY R. HERBERT
Governor
SPENCER J. COX
Lieutenant Governor

ACTION REQUEST RESPONSE

To: Utah Public Service Commission

From: Utah Division of Public Utilities
Chris Parker, Director
Energy Section
Artie Powell, Manager
Abdinasir Abdulle, Technical Consultant
Charles Peterson, Technical Consultant

Date: June 27, 2014

Re: Docket No. 14-035-63. Rocky Mountain Power Major Event Report – April 22 – 24, 2014.

Recommendation (Conditional Approval)

The Division of Public Utilities (“Division”) recommends that the Public Service Commission (“Commission”) approve Rocky Mountain Power’s (“Company”) application for Major Event exclusion for the event that took place on April 22 – 24, 2014. The System Average Interruption Duration Index (SAIDI) value for the event exceeded the threshold that defines a major event under the Institute of Electrical and Electronic Engineers’ (IEEE) 2.5 Beta methodology adopted by the Commission in 2005 in Docket No. 98-2035-04. The Division also recommends that the Company file with the Commission the corrected Tmed using the appropriate data set.

Issue

On May 21, 2014, the Company filed with the Commission its Major Event Report for the event that took place on April 22 through 24, 2014 requesting that this event be excluded from its

network performance reporting. On May 21, 2014, the Commission issued an Action Request to the Division asking the Division to review the request for agency action and to make recommendations. The Commission asked the Division to report its findings and recommendations by June 20, 2014. At the request of the Division, the Commission later extended the due date of the Action Request to June 27. This memorandum represents the Division's response to the Commission's Action Request.

Event Description and Restoration Effort

On April 22 through 24, 2014, a windstorm with a wind speed of 80 miles per hour toppled trees into Rocky Mountain Power's lines. In addition, dust blown up by the windstorm contaminated Company facilities. This contamination along with a light rain in the area resulted in number of pole fires. Among these pole fires was a transmission structure in a remote mountainous area. The impacted operating areas included, but were not limited to, Salt Lake City Metro, Jordan Valley, Ogden, Park City, and Smithfield.

According to the Company, the damage on the Company's facilities was extensive and included replacement of 15 transmission poles, 87 distribution poles, 56 cross arms, 23 transformers, and about 10,000 line feet of conductors. The event also resulted in 18,760,976 customer minutes lost and 79,529 customers experiencing sustained interruptions. The estimated total cost of the event was \$1,500,000 consisting of a capital cost of \$660,000 and labor expense of \$840,000.

Discussion

For the 2.5 Beta Method to be valid, the daily SAIDI data must follow a log normal distribution. That is, the log of the daily SAIDI data must follow a normal distribution. Each year, the Company assembles the preceding five years of daily SAIDI values and uses it to calculate the threshold (Tmed) that defines a major event under the IEEE 2.5 method adopted by the Commission in 2005 in Docket No. 98-2035-04. This Tmed will be used throughout the entire calendar year. To make sure that the Tmed for the calendar year is valid, the Division checks whether the daily SAIDI data follow a log normal distribution.

The Division performed a normality test to determine if, under normal conditions, the natural log of the Company's daily SAIDI values is approximately normally distributed. The data covered

the period from January 2009 to December 2013 and excluded the customer requested and pre-arranged outages. To perform the test, the Division first identified the outliers in the data set using a Box-and-Whisker plot and removed them from the data set. Removing the outliers was essential to ensure that the remaining data represented “normal” operating conditions.

To test for normality, the Division used Kolmogrov-Smirnov normality test. The null hypothesis tested was that the natural log of the Company’s daily SAIDI values is normally distributed. The test failed to reject the null hypothesis at $p < 0.034$. Hence, the Division concludes that, under normal conditions, the natural log of the Company’s daily SAIDI values is normally distributed and the use of the 2.5 Beta Method is justified.

The Division reviewed the Company’s calculations of the threshold that defines a major event. In its filing, the Company calculated the Tmed as 5.47 SAIDI minutes for Utah using data that included customer requested and pre-arranged outages. In calculating the Tmed, the customer requested and pre-arranged outages should be removed from the data set. The Company provided to the Division a data set that excludes these outages. Using this data set, the Division calculated the Tmed to be 6.48 state minutes. For this event, the Company calculated the daily SAIDI value for Utah to be 21.73 minutes. Based on the above discussion, the Division concludes that the April 22 through 24, 2014 event exceeded the daily SAIDI value threshold. Therefore, the Division recommends that the Commission approve the Company’s application for Major Event exclusion for the event that took place on April 22 – 24, 2013 under the condition that the Company files a corrected calculation of the threshold.

The Company’s Network Performance Standard No. 4 states that “*The Company will restore power outages due to loss of supply or damage to the distribution system within three hours to 80% of customers on average.*” The Division understands this standard to be applicable to normal conditions. In the case of a Major Event, the Division would determine whether a satisfactory level of effort was expended by the Company to restore power to comply with this standard.

In reviewing the Company’s restoration efforts, the Division noted that the Company used, in addition to its local crews, company crews borrowed from other operating areas, contract crews, substation crews, and vegetation crews. These crews succeeded in restoring power to 70% of the

customers who experienced sustained outage within three hours. The Division is satisfied with the level of effort expended by the Company to restore power and concludes that the restoration effort was adequate.

Conclusion

Therefore, since the Utah SAIDI value, 21.73 minutes, calculated for the event exceeds the daily SAIDI value threshold limit of 6.48 minutes, and the restoration effort was adequate, the Division concludes that this event was a Major Event and should be excluded from the network performance reporting.

CC: Dave Taylor, RMP
Michel Beck, OCS