



GARY HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

State of Utah
Department of Commerce
Division of Public Utilities

FRANCINE GIANI
Executive Director

CHRIS PARKER
Director, Division of Public Utilities

ACTION REQUEST RESPONSE

To: Utah Public Service Commission

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

Date: September 17, 2019

Re: **Approve Major Event Application, Docket No. 19-035-32.** Rocky Mountain Power Major Event Report for July 5-8, 2019 – Major Event No. 46.

Recommendation (Approve)

The Division of Public Utilities (“Division”) recommends that the Public Service Commission (“Commission”) approve Rocky Mountain Power’s (“RMP”) application for Major Event exclusion for the event that took place on July 5 through July 8, 2019. 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 method adopted by the Commission in 2005 in Docket No. 98-2035-04.

Issue

On August 19, 2019, RMP filed with the Commission its Major Event Report for the event that took place on July 5 through July 8, 2019, requesting that this event be excluded from its network performance reporting and customer guarantee failure payments. On the same day, the

Commission issued an Action Request to the Division asking the Division to review the request for agency action and to make recommendations. On August 20, 2019, the Commission issued a notice of filing and comment period asking any interested party to submit comments on RMP's Request on or before Wednesday, September 18, 2019 and reply comments on or before Thursday, October 3, 2019. This memorandum represents the Division's the Division's comments on RMP's request for Major Event exclusion of the event that took place on July 5 through 8, 2019.

In reviewing the filing, the Division identified a potential issue with one of the causes of the sustained outage, namely, an equipment failure at the Parowan substation. The Division discusses the nature of this failure herein but is satisfied that RMP acted prudently with respect to maintenance of the equipment and restoring service to its customers after the event.

Event Description and Restoration Effort

On July 5 through 8, 2019, a succession of two incidents happened that resulted in customers in Cedar City, Jordan Valley, Richfield, Salt Lake City Metro, and to lesser extent other operating areas, experiencing outages. The first incident was that of a transformer bushing failure on the Parowan Valley Substation power transformer in Parowan. This incident resulted in some customers being without power for 2 days, 2 hours and 38 minutes. Within about an hour after customers affected by the Parowan incident were fully restored, a car hit a pole resulting in blowing the substation high-side fuses. As a result, a large number of customers in the southeast area of the Salt Lake Valley experienced outage for up to 11 hours and 49 minutes.

These incidents combined resulted in 8,314,354 customer minutes lost and 18,344 customers experiencing sustained interruptions, with more than 1,808 customers experiencing interruptions lasting over 24 hours. The event cost was estimated to be \$46,890.

The restoration of power for the Parowan incident was delayed primarily because Parowan is a relatively remote area and there was no alternate or replacement equipment nearby to provide

temporary or permanent restoration. RMP identified the nearest equipment to support the high operating voltage (34.5 kV), as a mobile substation transformer and other materials needed for temporary or permanent restoration from Wyoming. While waiting for the Wyoming mobile substation transformer to be delivered, RMP installed a mobile generator shipped from Las Vegas to restore power to some of its customers.

According to RMP, the restoration of power for the car hit incident required crews to first isolate the damaged area from the car hit pole. Then the crew replaced the car hit pole, conductor, and failed transformer, while cleaning up the oil spill from the damaged transformer. The crew succeeded in restoring power to the last customer after 11 hours and 49 minutes.

In addition to its local crews, crews from other operating areas were called in to assist in restoration efforts. According to the Company, a total of 28 employees were mobilized in the restoration efforts. The Company replaced approximately 7,703 feet of conductor, 2 distribution poles, 1 transmission pole, 18 line splices, 17 insulators, and 2 guy wires. During the restoration effort, approximately 70% of all customer outages were restored within 3 hours, 20% were restored within 3 to 24 hours, and 10% were restored in over 24 hours.

Discussion

In reviewing RMP's filing, the Division noticed that the Parowan incident was due to equipment failure. Specifically, a substation transformer. To the Division's knowledge, this is the first time RMP has requested a Major Outage due to equipment failure independent of weather related activity or other external causes. To determine if RMP could have prevented the catastrophic failure of the transformer through maintenance, the Division submitted a data request to RMP requesting it to provide its most recent condition-based sampling report on the substation transformer equipment that failed at the Parowan Valley Substation.

Rocky Mountain Power's response showed that it performed annual condition-based assessments to monitor the condition of the transformer, as signaled by its oils. While these assessments did not detect any specific problems that would result in immediate concern or indicate imminent

failure, they did identify a recent reading showing a slightly elevated oxygen/nitrogen ratio. The presence of oxygen indicates there may be a loss of the seal of the transformer, which allows it to leak fault gases to the air. Though the oxygen/nitrogen ration was not at a level to cause immediate concern, it indicated that the transformer may have experienced a fault event. As RMP explained, after a fault event, gas levels may return to normal levels or they may remain high. In any event, RMP would continue to monitor the levels and assess the condition of the transformer for potential problems, as RMP's data response indicates it did in this case. Therefore, there is no indication that RMP could have prevented the transformer from failing and that RMP acted imprudently with respect to maintenance of the equipment and restoring service to its customers after the event.

The Division reviewed the Company's calculations of the threshold that defines a major event under the IEEE 2.5 Beta method adopted by the Commission in 2005 in Docket No. 98-2035-04. Based on the data the Company provided to the Division, the Division determined that the threshold for the Daily SAIDI value for the year calculated by the Company, 5.08 minutes, is correct. For this event, the Company calculated the daily SAIDI value for Utah to be 8.79 minutes. Based on the above discussion, the Division concludes that the July 5 through July 8, 2019 event exceeded the daily SAIDI value 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. Given the nature of the event and having reviewed the Company's filing, including its restoration efforts, the Division concludes that the Company's restoration efforts were adequate.

Conclusion

Therefore, since the Utah SAIDI value for this event, 23.96 minutes, exceeded the daily SAIDI value threshold limit of 5.08 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: Jana Saba, RMP
Michele Beck, OCS