Report to the Utah Public Utility Commission

Electric Service Reliability - Major Event Report UT-16-2

Event Dates:	April 30 – May 1, 2016
Date Submitted:	June 10, 2016
Primary Affected Locations:	Ogden, Salt Lake City Metro, Layton
Primary Cause:	Wind storm
Exclude from Reporting Status:	Yes
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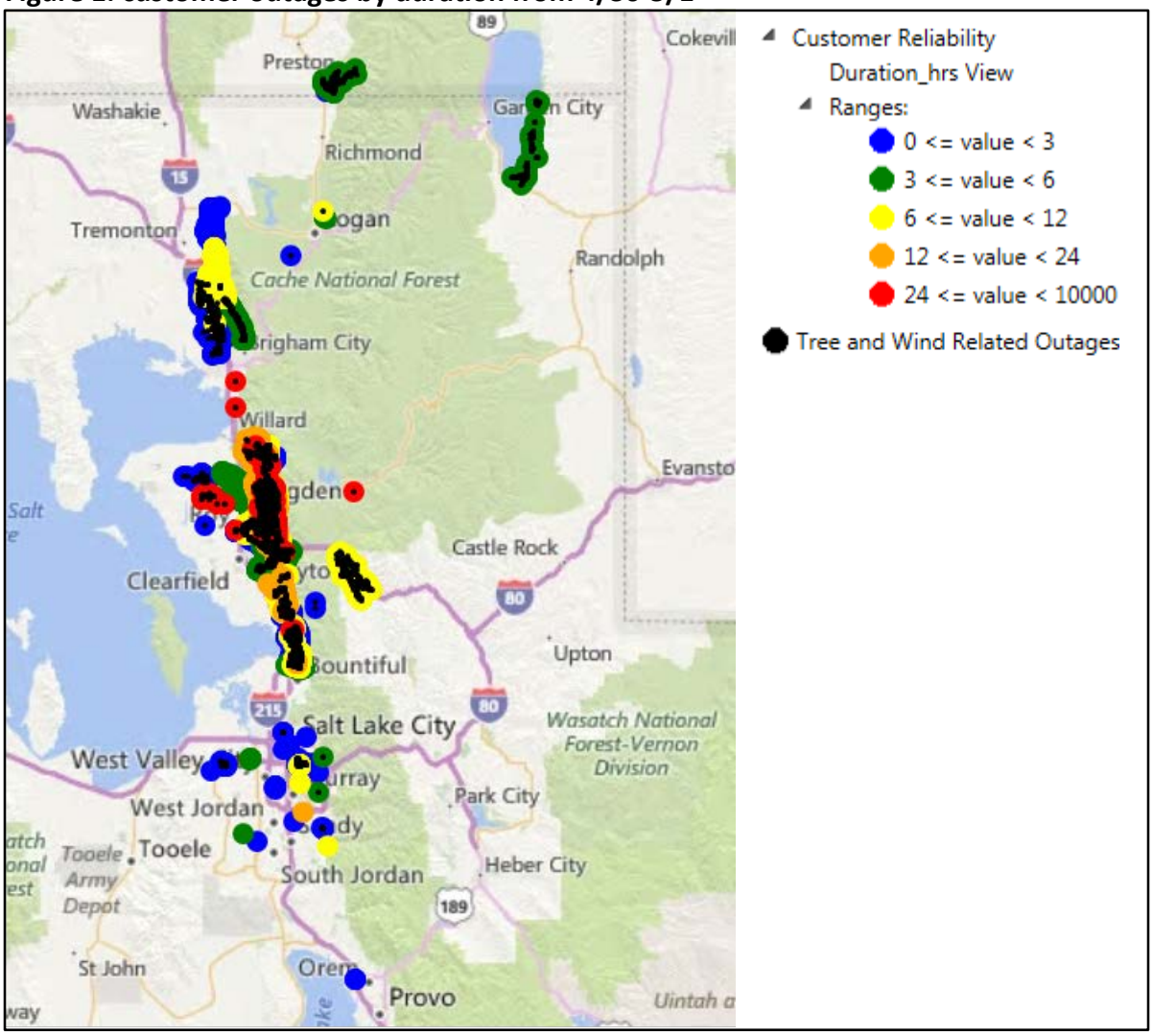
Report Approved by:	Heide Caswell / Dan Bodily / Derrick Scott / Ken Shortt

Event Description

On the evening of, April 30, 2016, a strong easterly down-sloping wind began severely impacting facilities in Weber and Davis Counties. High winds continued through the next day with gusts reported as high as 91 mph. Wind and tree-related outages accounted for over 78% of all customer interruptions and customer outage duration, breaking poles and ripping equipment and mounting hardware. At 5:43 am on May 1, the number of customers without power peaked at 43,145. Shortly thereafter several large outages were repaired which restored power to large blocks of customers. However, concurrent to these restorations an uptick in localized single customer outages began. Some of these outages were the result of tree and wind-related outages that damaged secondary lines as well as customer equipment. During the event 2,303 customers were out of power over 24 hours, many of which required tree crews to remove trees from facilities before crews could begin work to restore power. Figure 1 highlights outages in northeast Utah, showing customer outages by duration in color overlaid with a black dots if the cause was wind or tree related.

Event Outage Summary	
# Interruptions (sustained)	444
Total Customer Interrupted (sustained)	72,719
Total Customer Minutes Lost	32,308,736
Event SAIDI	36.86 Minutes
CAIDI	444
Major Event Start	4/30/16 7:40 PM
Major Event End	5/2/16 12:00 AM

Figure 1: customer outages by duration from 4/30-5/1



Restoration Summary

In the early evening of April 30th the metro region of Salt Lake City and Ogden began experiencing a handful of wind-related outages. Outages quickly grew in the early hours of May 1st. It became apparent with the increasing growth of customers outages that additional resources would be needed to assist in restoration activities. At 9:00 am on May 1 the Rocky Mountain Power Incident Command Center was activated, who then acts as a central point for logistics, communication and orchestration of response activities. Personnel were quickly assembled to assess current outages and crew availability. Internal repair crews from Salt Lake City, Price, American Fork, Jordan Valley, Tooele, Wasatch Restoration Center, and Idaho, including Shelley, Park City, and Preston, were dispatched to assist crews from the Ogden and Layton service centers. Additional tree crews were also mobilized to respond to the numerous downed trees interfering with powerlines. A total of 458 personnel and contractors worked around the clock to repair and restore power, including 36 troubleshooters assessing damage and identifying needed repair materials as well as 283 internal and external crewmembers responsible for restoration and 139 tree crews who worked in concert with restoration team members to clear vegetation as needed to restore power.

Restoration activities were heavily impacted by the persistent and intensive weather, which continued for over 24 hours. Conditions such as breaking trees, air-borne debris, and high winds created an extremely challenging work environment. In some cases, where it was determined to be hazardous to crews, restoration activities were delayed until it was no longer unsafe to access and repair lines. In the interim those resources were directed to areas not considered to be hazardous, with priorities placed to facilities where large volumes of customers were affected to maximize the restored customers. Many of these high impacting outages were restored on the morning of May 1st. Once these outages were restored crews were able to identify outages on facilities affecting smaller volumes of customer interruptions. It was at this point in the storm that the quantity of outage events (but affecting fewer customers) began to increase, as seen in the event detail charts below. In some cases customers experienced outages to the meter bases or service masts, which are customer equipment and repairs need to be arranged with a qualified electrician. Estimated cost for this major event is over $2.1 million. Approximately 89,733 feet of conductor, 38 poles, 14 transformers, and 62 crossarms were used during the event.

There were two company and no commission customer complaints made regarding the major event.

Restoration Intervals

Total Customers Sustained	< 3 Hrs.	3 - 24 Hrs.	24 - 48 Hrs.	48 - 72 Hrs.	72 - 96 Hrs.	96+ Hrs.
72,719	25,025	45,022	2,612	59	0	1

Restoration Resources

Personnel Resources	
Troublemen/Assessors	36
Internal Crewmembers (local)	163
Internal Crewmembers (borrowed/non-local)	78
External Crewmembers (contract)	24
Substation Crewmembers	18
Vegetation Crewmembers	139
TOTAL	**458**

Materials	
# Poles (distribution)	38
Approximate Line Feet (conductor)	89,733
# Transformers	14
# Crossarms	62

State Estimated Major Event Costs

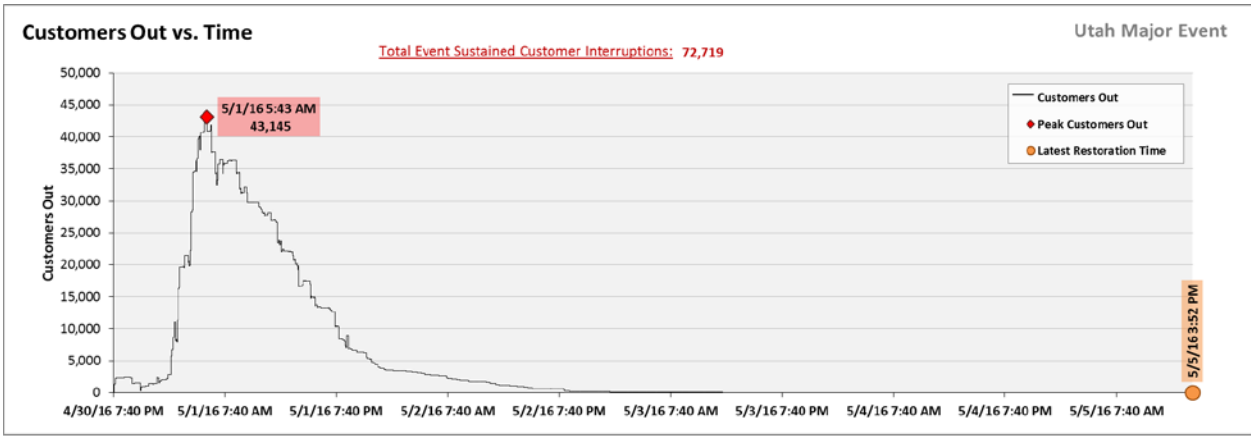
Estimate $	Labor	Contracts	Materials	Overhead	Total
Capital	$97,000	$33,000	$38,800	$22,900	**$191,700**
Expense	$1,026,000	$718,000	$112,400	$59,540	**$1,915,940**
Total	**$1,123,000**	**$751,000**	**$151,200**	**$82,440**	**$2,107,640**

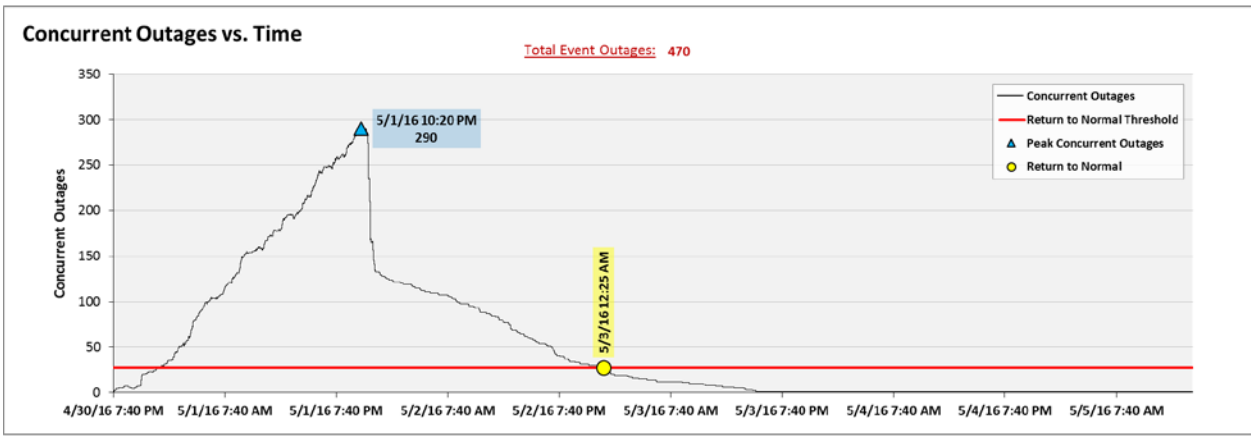
Major Event Declaration

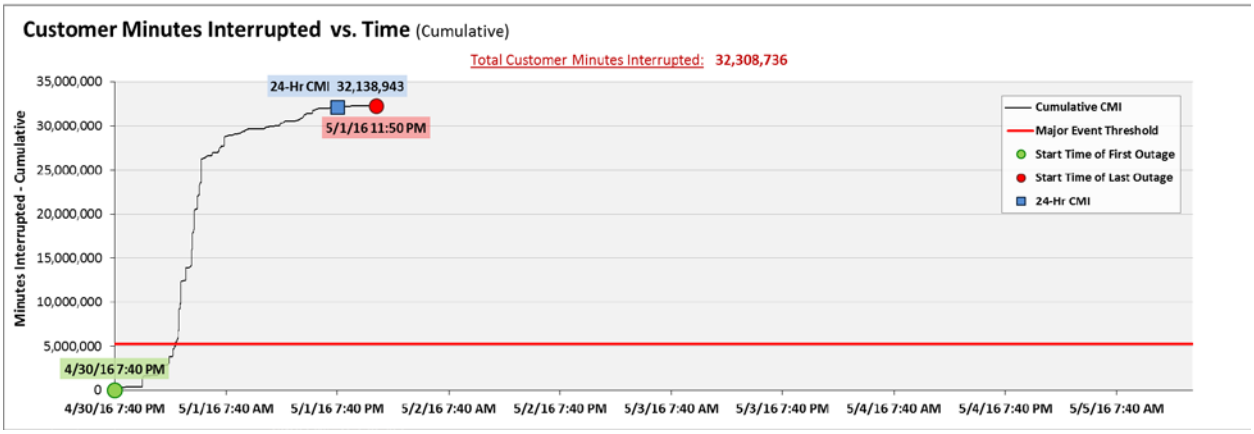
Rocky Mountain Power is requesting designation of this storm and its consequences to be classified as a "Major Event" for exclusion from network performance reporting. This major event exceeded the company's current Utah threshold for customer minutes lost in a 24-hour period, consistent with Utah Administrative Code R746-313.

The 2016 annual threshold for Utah is 5,312,799 minutes (i.e., 6.06 state SAIDI minutes).

Event Detail







SAIDI, SAIFI, CAIDI by Reliability Reporting Region

Please see the attached system-generated reports.